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# BRITISH NEW GUINEA:

## COUNTRY AND PEOPLE.

BY

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WITH MAP AND ILLUSTRATIONS.

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# ILLUSTRATIONS.

# BRITISH NEW GUINEA.*

## COUNTRY AND PEOPLE.

I HAVE come here to-night to invite your attention for a little to one of the newest and least-frequented provinces of the empire; to talk to you of a great land that has lain unnoticed, and has remained practically quite unknown, up to our own day. Hundreds of years ago it was put on the map as a shaded spot marked "Islands of the bad people," and it continued to be regarded as a place to be avoided. The British lion woke up the other day, and saw that he must put his paw on it, were it only to keep other poachers at a safe distance. The Queen's sovereignty was proclaimed over it, and we were at once face to face with the question, What was to be done with this junior member of our already large family? Before that could be determined it was necessary to study its character. That has been done for the last half-dozen years under a duly established government, and now we purpose to review briefly what we have been learning of the country and of the people for whom we have thus become responsible. We shall therefore consider, in rapid outline in this paper, first the country, and then its inhabitants. It is necessary to know both, to some extent, to be able to rule it. Unless we know the people we cannot sympathize with them, and unless we in some measure feel with and for them, we can only rule by force—a method that cannot be applied in a country like British New Guinea, in which there has never been a soldier.

### I. GEOGRAPHICAL.

The great island of New Guinea is said to contain a superficial area of nearly 300,000 square miles. It extends from the equator to 12° south of it. Rather more than the western half belongs to the

* Part of this memoir was read at the Royal Geographical Society, February 25, 1895. Map, p. 100.

Netherlands; the Germans possess some 60,000 square miles of it on the north-east; and the remainder, the south-east portion, amounting to nearly 88,000 square miles, is British territory.

The colony now called British New Guinea was formally annexed to the Queen's dominions by the first administrator on September 4, 1888. This deliberate act of her Majesty's government was the official consummation of the efforts and wishes of many officers and subjects of the empire, who had seen clearly that it was desirable and necessary that at least part of that country should be added to the realm.

The south coast was inferentially taken possession of for his Britannic Majesty by Captain Bligh in 1792. In the following year the East India ships *Kormuzen* and *Chesterfield* hoisted the flag in the west end, and that part was for a short time held from Geelvink bay by British soldiers. The east end was again provisionally added to our dominions by Lieutenant Yule in 1846, and by Captain Moresby in 1874. The government of Queensland, the ministerial head of which was then Sir Thomas MacIlwraith, took possession of the east end of New Guinea, through the police magistrate of Thursday Island, in 1883. None of all these acts received the official sanction of the sovereign.

Commodore Erskine, acting under instructions from the Imperial Government, with official ceremony, declared a protectorate at Port Moresby, November 6, 1884. In the succeeding year the late Sir Peter Scratchley arrived there as Special Commissioner. After devoting himself with much enthusiasm to his task for three months, he contracted fever, of which, unfortunately, he died. Those who, like myself, have had an opportunity of reading what was written on New Guinea by Sir Peter Scratchley, cannot but admire the wisdom, clearness, justness, and independence of his views, and cannot but sincerely regret the untimely death of such an able and valuable officer. He died as such a man would wish to die, discharging the duties of his post.

From the death of Sir Peter Scratchley to the declaration of sovereignty, the duties of Special Commissioner were performed by the Hon. John Douglas, C.M.G., an old and universally esteemed servant of the Queen in that land which by name is peculiarly her Majesty's own.

The extreme limits of the new colony lie between the fifth and twelfth degrees of south latitude, and the one hundred and forty-first and the one hundred and fifty-fifth degrees of east longitude. Its width, therefore, in a straight line is more than $\frac{1}{26}$ of the circumference of the earth.

As regards area, it is sufficient on this side of the globe to remember

that it is rather larger than Great Britain; and on the other side of the globe, that it slightly exceeds the colony of Victoria. In round figures, it may be set down at 90,000 square miles.

In an excellent paper, read before this Society February 25, 1884, by Sir Clements Markham, our present distinguished President, what had up to then been done to elucidate the geography of New Guinea is given in such a way as to practically dispose of the historical part of the subject up to that date. It should be read with a memorandum by the late Hydrographer Evans, in Blue Book C, 1566.

In saying this much, however, of Sir Clements Markham's most useful and interesting paper, rigid historical accuracy requires that the latter part of his record be amended by one or two not very serious corrections, and by at least one addition, which supplies an important historical omission.

Sir Clements says, "Some interesting journeys have been made to the foot of the Owen Stanley Range."

If by that range is meant the great central chain of mountains in the interior, it must be stated that there is no record or report of any journey "to its foot," except by the expedition led by Mr. Cuthbertson, and by parties despatched by the government, all subsequent to the date of the paper in question. In all other cases the journeys made "to the foot," "to the slopes," and "to the base," of the Owen Stanley range are merely rhetorical expressions, which mean, geographically, visits to the low hills that lie between the Owen Stanley range and the south coast, but generally much nearer to the latter. It has been found that the only difficulty lies in getting "to the foot" of the range; once there, any person can go to the top. The ascent of the Owen Stanley range mentioned in the *Proceedings* of this Society for 1887, vol. ix. p. 621, and referred to by the President in his address on the opening of the session, p. 767 of the same volume, never took place; and it is mentioned here only because it does not seem to have been previously contradicted.

In Sir Clements Markham's paper, the so-called Mai Kussa or Baxter river is multiplied by three as to width and length. It has been correctly described and charted by Mr. Strode Hall, and by Mr. J. B. Cameron, independently of each other. It is an inlet of the sea, on which it is difficult to find fresh water. It is said that a steamer ascended it 91 miles, and took nine hours to go down-stream. It is represented in Guido Coro's map, published in 1878, as entering the Fly river. Frederichsen has, in his map of 1885, given logical effect to the above description by boldly, but quite erroneously, carrying the Mai Kussa into the Fly near D'Albertis Island, by which on paper he

has obtained something approaching the assumed length as well as secured the "stream" that had been mentioned.

It is undoubtedly true, as stated by Sir Clements Markham, that the missionaries of the London Missionary Society supplied valuable information, of a general character, as to the geography of places on or near the coast, at a time when such knowledge was not otherwise forthcoming, and when, it should be added, it could be obtained only with danger and difficulty. In addition to that, the Rev. Dr. MacFarlane, as very properly mentioned by Sir Clements, courageously ascended the Fly in 1875 for 150 miles, and that, too, in the face of the hostility of the natives, who, according to D'Albertis,* required the use of firearms, fireworks, and dynamite, to keep them at bay.

The principal addition that should be made to Sir Clements Markham's paper, to better complete the period he dealt with, is the discovery—really a very important one—of the mouths of the Purari river, by the Rev. James Chalmers, of the above-mentioned society, in 1879, and his subsequent visit to that place in 1883. Mr. Chalmers makes no pretence to having ascended the river, or even to an examination of the delta; but a reference to his books, 'Works and Adventures in New Guinea,' and 'Pioneering in New Guinea,' will clearly establish his claim to be the discoverer of the Purari outlets.

No mention was made by Sir Clements Markham of the little-known expedition sent by the *Age* newspaper of Melbourne in 1883. It was led by Mr. Morrison; but, like Mr. Forbes's expedition in 1887, it was wrecked and turned back by the natives of the Ebe district. It is of historical interest as showing the enterprise of the journal, and the keen wish of Australia to know more of New Guinea.

The *Argus* expedition was contemporaneous with that of its Melbourne rival, the *Age*. Mr. Armit, its leader, found his way to Sogeri, the head-quarters of Mr. Forbes in 1885, and then went away east to the head-waters of the Vanigera, or Kemp Welsch river.

While the territory was a protectorate, five explorers were at work in it.

Captain Strachan, in 1885, visited the Mai Kussa and some contiguous parts of the coast district. He met the so-called Tugeri invaders, from the Dutch territory, in the Mai Kussa, and abandoned his vessel to them, and reached the island of Saibai after undergoing much trouble, danger, and hardship, quite out of all proportion to the geographical results. Losing his vessel, he was not able to check his position by astronomical observations, so that his map is not so valuable as would otherwise have been the case.

* 'New Guinea,' vol. ii. pp. 25, 36.

Captain Everell, in 1886, in command of the most completely equipped and strongest party that has ever travelled in the country, fitted out by the governments of some of the Australian colonies, and aided also by the Royal Geographical Society of Australasia, examined the Strickland river, a great tributary of the Fly, and laid down its course, checked by astronomical observations taken by himself.

More important and extensive work was performed by Mr. Theodore Bevan from 1885 to 1887, work which deserves distinct recognition, as it places him, in respect of geographical work, next to D'Albertis among our explorers. He ascended the Aird river and several of the

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streams and watercourses in that neighbourhood, and examined some of the mouths of the Purari river, as well as the main stream itself, until within a few miles of the nearest spur of the great central sandstone range of Naivaia and Maikikiria. Mr. Bevan's charts, especially those from his own traverses, were found to be as nearly correct as could be reasonably expected. A few points were roughly checked by him by astronomical observations, which added considerably to the value of his maps. A full account of Mr. Bevan's work will be found in his book on New Guinea.

Mr. Bevan, it should be stated, avoided hostile encounters with the

natives, but naturally had to do so more than once by making a speedy departure. He does not, however, seem to have left room to believe that the white man was really beaten by the native. He practically confined himself to geographical work, and, like Forbes and Cuthbertson, showed full respect for native property, which it seems was less rigidly observed by D'Albertis and by some of the members of the parties of MacFarlane * and Everell.†

Mr. H. O. Forbes, well known for his valuable work, 'A Naturalist's Wanderings in the Eastern Archipelago,' proceeded to the Sogeri district in 1885, with a large and fully equipped force, officially described as consisting of three Europeans and twenty-five Malays.‡ He made extensive and valuable collections, but did not then publish any serious geographical work. In 1887, he was sent by Mr. Douglas "to ascertain if Mount Owen Stanley could be ascended from the head of the Goldie." If Mr. Forbes's first party was too strong, his second party was probably too weak; but we must remember that it was organized by Mr. Forbes, after he had spent many months in the district he proceeded to, and he was therefore best able to judge in this matter. They travelled up the well-known Goldie river, and seem to have got less than a day's march beyond the Brown, when they had to return on account of the natives refusing to proceed further, and by others taking possession of the camp-gear left behind. The party, evidently in great peril, saved themselves by a precipitous retreat, pursued for five hours by the natives, who were kept at bay only by the menacing rifles of the fugitives.§ This flight was extremely hazardous to that party, and could not fail to make the district more dangerous afterwards.

The head-waters of the Goldie, and part of the Brown river which lies between the Goldie and the Vanapa, which last drains the south side of the central part of the Owen Stanley range, had been fully examined by some of the four or five score of diggers that prospected there in 1878. The Brown was named after Peter Brown, one of their number who was drowned in crossing, and was buried near it. Mr. Goldie had collected in the district early in 1878, and had procured specimens of gold-dust there, which led to the rush of diggers. The late Mr. Hunstein had been shooting probably as far inland as was reached by the diggers, if not further, especially in an easterly direction. But none of these attempted to map the district, a task that was undertaken by

* D'Albertis's 'New Guinea,' vol. ii. pp. 39, 40.

† 'Voyage of the *Bonito*,' by William Bauerlein.

‡ Report by Mr. Seymour Fort, p. 41.

§ 'Expedition to the Eastern Slopes of Mount Owen Stanley.' Report by H. O. Forbes, p. 5. C. Beal: Brisbane.

Mr. Forbes. The scientific value of Mr. Forbes's beautiful map would have been much enhanced had he checked his work by astronomical observations.

In 1887 that spirited and enterprising body, the Royal Geographical Society of Victoria, mainly moved by their enthusiastic secretary, Mr. MacDonald, and by their illustrious scientist, Sir Ferdinand von Müller, sent an expedition to New Guinea under the leadership of Mr. Cuthbertson. It received the support and co-operation of Mr. Douglas. Mr. Cuthbertson wisely selected as his objective the nearest part of the central chain, and succeeded in attaining a height of 8000 feet on one

PORT MORESBY.

of the summits of Mount Obree, by much the greatest altitude that up to that time had been reached in the territory. Mr. Cuthbertson, who is a competent astronomical observer, and a first-class draughtsman, has prepared and published a map of the country traversed by him. The gentlemen mentioned above as leading expeditions in New Guinea have all written papers or books on their travels and explorations, so that their work will remain permanently on record. But a few men have done perhaps equally well in the same field, and have left no printed trace of their doings. Captain Colin Thomson, lately in the service of the government of the colony, has been travelling about the coast and among the islands of the Possession for nearly thirty years. He visited the Louisiades, some of the D'Entrecasteaux islands, and

many parts of the south coast, both east and west, twenty-five years ago. Although Captain Thomson has not himself actually published maps, he has made sketch charts and reports, and he has been able to give so much valuable information and assistance to others that his name should always appear in the roll of our explorers.

Captain Dubbins and the late Mr. Andrew Goldie should also be added to the list. The latter, as a collector, examined many places in the d'Entrecasteaux group, and on the south coast, and was, as already mentioned, long camped in the district afterwards mapped by Mr. Forbes.

Officers of the government have subsequently examined all the important rivers of the colony, with two or three exceptions as far as they are navigable. They have also visited and partially examined several of the great mountains on Goodenough Island; Goropu and Maneao on the north-east; the Owen Stanley Range, the Mekeo range, and Mount Yule, in the central chain.

A brief glance may now be taken of the salient physical features of the colony of British New Guinea. The portion of the mainland that belongs to the Possession has a much greater measurement from west to east than from south to north. Mountain chains run its greatest length in a general east and west direction, but their extension inland is on the western half still to some extent unknown. At the east end the mountain mass, 3000 or 4000 feet high, meets the sea without any intervening flat or rolling land. Sixty miles westward it begins to be separated from the sea by some low-lying or hilly country, and reaches a height of 6000 or 8000 feet. It gets steadily further from the sea as we proceed west, until at Cloudy bay it is probably 30 or 40 miles inland, and about 10,000 feet high. It maintains that altitude in different peaks until it gets nearly as far west as Port Moresby, and is separated from the ocean by many rolling or precipitous hills. The highest known point in the Possession is Mount Victoria, the greatest altitude on the Owen Stanley range, about 13,000 feet. Some 20 miles of the summit of this range, which looks down on the sea at each side, were traversed by a government party in 1889, from the west end of Mount Knutsford to the east end of Mount Victoria. This great ridge was some 11,000 or 12,000 feet high. Proceeding westward, the next highest point in the chain is Mount Yule, the top of which was reached by a government party under Mr. George Belford in 1890. This expedition could not have been undertaken but for the liberality of the Royal Geographical Society of Victoria. This part of the central range is about 10,000 feet high, and in a straight line probably less than 40 miles from the sea. Proceeding further westward, the central mountains

recede more into the interior, and become lower. The chain, as seen from the upper Bailala river, is 60 or 80 miles from the sea, and 6000 or 8000 feet high. It is met with on the Purari river at a less distance inland, in the Naivaia and Maikikiria mountains; but these may be a different range, lying in front of the continuation westward of the chain seen from the upper Bailala river. This Purari chain continues westward for at least 40 or 60 miles, at heights of 2000 to 4000 or more feet. The central range lies just north of the boundary of the Possession, where it joins the territories of Germany and the Netherlands at its most north-westerly point. It has then a height of 5000 or 6000 feet in Mount Blücher. But the highest mountains seen in Dutch territory from our north-west boundary must be at least 10,000 or 12,000 feet high, and at a distance of 20 to 40 miles seem to be remarkably precipitous.

Opposite the Aird district there are mountains 6000 or 8000 feet high in the interior, probably in British territory, but nothing has been seen in the Possession west of Mount Yule that equals that peak in altitude.

In the east the range bifurcates to enclose Tauwara, or Sir Alexander Milne bay, as it was named by Captain Moresby. From the north side of this a range is continued up along the Tauputa coast, coming close down to the sea. It then turns inwards to form the Maneao range and the lofty-crested Goropu mountains, probably 10,000 or 11,000 feet high. The smoking Mount Victory, not yet ascended, and Mount Trafalgar are detached masses of volcanic origin forming Cape Nelson, from 3500 to 4500 feet high.

From the northern side of Mount Victoria another range runs in a northerly direction 30 or 40 miles from the north-east coast, and reaches heights of 5000 to 10,000 feet high. Except at the east end of the mainland, from Magula Island to the north end of Goodenough bay, the mountain-chain does not at any place come down to the sea. The slopes of some mountains, especially those of Mount Victory and Hydrographer range, would seem well adapted for plantation purposes, and doubtless places could be found at numerous points on the central chain suitable for growing vines or other products at different altitudes; but land suitable for forming plantations under the direction of Europeans, would be chiefly on the alluvial flats near rivers, or between the rolling hills that lie between the sea and the mountains, or on these hills themselves.

Speaking very roughly of the general geological characters, it may be mentioned that Mabudanan, the only hill near the coast on the west, is of granite; the mountains on the upper Fly, sandstone and limestone—characters preserved also in the Purari ranges; the Mount Yule district seems to be volcanic, and the Mekeo range volcanic and schistose; Mount

Victoria is schist and diorite; further east, schist, limestone, and volcanic formations are intermingled; the latter characterizing the Cloudy mountain peninsula. Near Goodenough bay the mountains are basaltic, with outcrops of limestone, and stratified sand and gravel. The northern range seems to be very varied. Near the coast the hills are limestone or volcanic. Mount Trafalgar is Olivine basalt, and the first hill on the Kumusi is also basaltic. Mount Victory sometimes gives forth nearly as much steam and smoke as Vesuvius; there are rivulets of hot water on its sides.

The islands are of much interest, though not of very great value from an agricultural point of view, they have, of course, no large rivers. Roua—or Rossel—at the extreme south-east, is very mountainous, rising probably to over 3000 feet. It is everywhere covered by forest, and has a wet climate. It is formed of schist, but has some volcanic outcrop, as at Yamba, the north-west corner.

Sagula (Sudest) has, on the east end, the wooded Mount Rattlesnake rising to nearly 3000 feet; the west end is made up of rolling hills and slopes. It seems to be all of slaty formation.

Misima is one great mountain mass springing at many places directly from the sea, densely wooded, and rising rather higher than Sudest. It is generally of schist, but presents great outcrops of limestone, which at several places show distinct terrace markings of different stages of elevation, and overlying lavas of different kinds. But some of the small Louisiade islands are of volcanic formation. Pannaieti consists of limestone, diorite, and quartzite. Moturina, Panaudiudi, Gulewa, and Utian, for example, show lavas and volcanic conglomerate. Bonabonana is a group of coral islands, and the Conflict group is a circular atoll, with a number of coral islands growing principally casuarina trees.

The lower portion of Duau is exposed, like Roua, to the full impact of the south-east wind, and is wet and fertile, though very mountainous. Its highest point is Mount Ovia. Its southern portion, and Mount Saromonai, its northern end, are composed of micaceous schist; the intermediate portion is volcanic. Where this meets the west abrupt end of Ovia there are hot springs and steam emanations at the coast, at a spot called Waipoiana. The island of Dobu and the adjacent part of the island of Fergusson are volcanic, showing clearly the remains of extinct craters.

On Dobu there are hot springs, traces of sulphur in the cliffs, and several spots giving out steam. There are boiling springs and steam exhalations at many places on the Fergusson coast opposite. The south-west corner of Fergusson is formed by a great mountain of micaceous schist, and so are the south-east and north-east corners, rising all of them

to 3000 or 4000 feet, but all the rest is volcanic. In Seymour bay, on the north-west, there are saline lakes containing lithia water, hundreds, if not thousands, of solfatare, giving out sulphur fumes, which condense and deposit flowers of sulphur, and there are pits and caverns of boiling mud and water. There are deposits of sulphur and alum, but not very pure nor of great extent. The nearest point of the island of Goodenough, which rises to over 8000 feet in the centre, is also volcanic, with some well-preserved extinct craters; the rest is all schistose. The Kiriwina group (Trobriands) are all composed of raised coral, on which there is a covering of very productive soil, which grows yams in greater

THREE KAILE NATIVES.

abundance than any other place in the Possession. Of the string of small islands that proceed north-west from Kiriwina, all are of coral except those of Kumkwalegu, which is pronounced to be decomposed trachyte; the neighbouring twin island, Wagalasu, of banded felsite; and Nauria, of micaceous trachyte. The island of Kawa is of coral, but boulders of micaceous trachyte were found at and in its base, but probably transported from Nauria.

The islands of Kitava, Iwa, Gawa, and Kwaiwata are so peculiar in formation as to be, perhaps, in some ways unique as a group. Round each of them, except Iwa, near to which no possible anchorage has been found, there is a ring of shallow water, from, say, 5 to 20 fathoms, gradually deepening outwards. Three of them have a narrow outer zone about 100

or 200 yards deep, and about 2 or 3 yards, say, above the sea; in the fourth, Iwa, this has been apparently washed away. Then comes a circular wall of coral limestone 300 or 400 feet high, so steep that parts of it have to be ascended on ladders; this wall runs round the island, enclosing a slightly undulating central plateau, 1 to 3 miles in diameter, according to the size of the island, and 50 to 100 feet below the top of the surrounding wall. In this plateau are, in each case, from half a score to a score of native villages, the inhabitants of which cultivate the rich brown soil of the central plateau. The outer lower ring and the high wall are densely wooded. The rain that falls in the centre drains through the coral bottom like water through a filter. Twenty miles south of Gawa there is the Egum atoll, with a diameter of 12 miles. It would be a probable explanation to suppose that these four islands had each a crater as a basis on which the coral insect has built, the whole fabric being afterwards elevated like the limestone terraces on Misima and on the north-east coast. No central volcanic core has been seen, but examination on a systematic plan has not been made. An officer reported lately that he had seen a large blue stone on Kwaiwata.

The greater portion of Murua is raised coral reef, but it has some hills of quartzite on the south, rising to perhaps nearly 1000 feet. On one of these is the stone quarry that yields the banded quartzite from which the best stone adzes are made that are found in all the islands and along the south coast as far as the Gulf of Papua. This hill is called Tabukuia ("sacred hill"), and the quarry is known as Debenewatu (probably "stone ridge"), all micronesian and significant names. Near the quarry are large heaps of chippings. The natives were not willing to show this place. They break out stone, and it is said also split up the rock, by fire. Veneina or Cannac Rock, between Murua and Nada, is composed of a hard siliceous slate. The Nada group is an atoll, with a number of over-populated coral islands.

There are numerous good harbours among the islands, and it is noteworthy that the two nearest the Solomon islands are well provided for in this way. Nada on the north-east, which is less than 200 miles from the nearest Solomon islands, has a commodious harbour; and on the end of Yela on the south-east there is the harbour of Pennegwa, on the end next the Solomons.

At Duau Island there is the very remarkable harbour of Sewa. Its entrance is concealed by an island, which leaves a deep water channel about 100 yards wide, which leads into a basin probably nearly 3 miles by 4, completely surrounded by hills. This place would have been the ideal spot to shelter and conceal a passing or invading fleet on its way past. The greater portion of the best and most easily

worked land on the islands is densely populated, but there is a certain amount of good land obtainable, as, for example, on the south side of Sudest, and there are some small unoccupied coral islands fit to grow cocoanuts.

At the present time there is perhaps no region to be found that would be so attractive to the yachtsman as British New Guinea, from the east end of the gulf to its eastern limits. There is magnificent scenery, especially in the D'Entrecasteaux group, and at places on the east end of the mainland. There are innumerable anchorages and harbours already known, and many more to look for. There is no danger from hurricanes, but the waters are still sufficiently unknown to make navigation interesting. There is great variety among the inhabitants in character, customs, and mode of life. There are high mountains that have never been ascended, hot springs to bathe in, new birds, new insects, new plants to collect, new rocks and new tongues to study. The sea is full of unexamined life, and there are hundreds of natives that know enough English to be guides and collectors without their knowing so much or being changed so much as to make them uninteresting.

In speaking of the rivers, it may be convenient to begin at the west end. The boundary of the Possession in the west is, at the sea, the Bensbach. This debouches at about 141° 1′ 30″. It is fresh at the mouth, or nearly so, and is navigable for 12 or 15 miles, but the country on both sides is too low and wet for permanent settlement. There are no villages in that vicinity. It is a convenient halting-place for either British or Dutch patrol parties. The Morehead opens some 25 miles east of the Bensbach. It is navigable for at least 120 miles, where it is still 3 fathoms deep, but only 40 or 50 feet wide. For the first 30 miles it traverses low wet country unfit for permanent occupation. Then there is a district which, though swampy at many places, is occupied by a strong agricultural tribe. Some 30 miles above them there lives another tribe, in a park-like country, with much clay soil covered by grass and sparse eucalyptus trees. Near the head of this river the ground is higher, grassy, with gnarled eucalyptus, and is thinly occupied by other tribes of natives. For the sportsman this river is very inviting, but not for the settler. The Wasi Kussa and the Mai Kussa are the west and east sides of an arm or loop of the sea that surrounds Strachan or Wasi Island. The Wasi side is some 30 miles long, perhaps rather longer than the Mai Kussa side. They are navigable and tidal, and give off many branches that extend into wet, marshy country. On the west side of the Wasi, near the sea, there is some good but rather low reed land; and on some of the highest branches there is some deep

prairie land, covered generally by grass and eucalyptus trees. The remnants of three or four tribes wander about in their vicinity, without permanent villages. These have been broken up and dispersed by the Tugeri or Saliraka invaders.

The Pahoturi, which enters the sea at Mabudauan, is navigable to boats for some 20 or 30 miles. It traverses low-lying lands, generally covered by the grass of wet clay soil, or by eucalyptus and bottle-brush trees, but some patches of good soil are forest-clad. It is thinly peopled.

The Oriomo opens into the sea nearly opposite to Daru Island, the government station for the western district. It goes through country much of which is similar to that on the Pahoturi, but there is more and better timber on it. The population is not numerous. The Fly is the largest river in the Possession. From above the delta to D'Albertis junction its course was remarkably well laid down by the last-named traveller, a close, accurate, and trustworthy observer, by far the most distinguished of all our explorers. Its somewhat tortuous channel is navigable for about 500 miles, the distance apparently reached by D'Albertis in a launch drawing about 4 feet of water. On the first 450 miles of its course there is probably not much land that would not be too low for plantations conducted by Europeans. There is, however, some forest land near the head of the delta that seems well worth examining. At 500 miles from the sea the country becomes hilly and very picturesque, the air fresh, and the climate exhilarating. As it nears the frontier the hills become mountains, some of which are extremely steep, and seamed and scored by old and recent landslips. The western branch of the Fly, and the Alice contributory, would appear to rise in Dutch territory. The Palmer branch, ascended by the government party to the British-German frontier, comes from German territory. Although a steam-launch can be taken up only something over 500 miles, a whale-boat can reach the frontier, or get to about 610 miles from the sea by the river channel. By the former western boundary of the colony, the 141st degree of east longitude, a small part of Dutch New Guinea, some 8 or 9 miles wide, was cut off by a loop of the Fly, so as to lie on its east side. It happened to be occupied by two powerful tribes, which certainly would have caused trouble to travellers on the river. By the recent arrangement between the respective governments, this little loop is now British territory. There are a number of powerful tribes on the delta, the most important now orderly and provided with good village policemen. Above the delta the resident tribes are friendly where they are known to us. A few miles from the junction of the Fly and Strickland, there are large unvisited native settlements. On the part of the upper Fly that was

reached by D'Albertis, the natives and he were on bad terms, and they cannot be trusted; but those near the frontier, who were not in contact with him, did not appear to be hostile. "Colours" of gold are found at a great many places in the river-bed where it enters the hilly district. Unless the cultivation of swamp rice or some similar product becomes an industry in the country, the Fly will probably not be of great agricultural value.

The Bamu river enters the west end of the gulf by several mouths, that lie within a dozen miles east of the Fly. It has been traversed through some three-score miles of low land, some of which is rich,

JAHOBA AND COMMODORE.

while much of it is swampy. It has fine fields of sago-trees. Three powerful known tribes live on it. It does not seem to reach hilly country. It is navigable to a steam-launch some 40 or 50 miles. Some 12 miles east of the Bebea mouth of the Bama is the opening of the Gama, which has been ascended some 30 miles. The rising tide runs up strong to that point, where the channel is some 80 yards wide. All the country traversed on it is swampy. It is occupied by two strong tribes, the upper one of which proved to be hostile and aggressive; but they were taken by surprise by the sudden visit of the party ascending the river.

Half a dozen miles beyond the Gama there begins the 20-mile-wide

estuary of the Turama river. This has been followed up some 80 miles, until it begins to break up among low limestone hills. There is a great population on its lower right bank, which is high enough to grow fruit-trees; and there are half a dozen powerful tribes on its course higher up. When the tide comes up this river, a very dangerous bore ascends it, which, advancing at the rate of perhaps 10 knots an hour, and 6 feet high, in a crescent-shaped breaker, at 40 miles from the sea, can be heard many miles away. This bore seems to ascend the eastern channel of the estuary. At 60 or 70 miles from the sea it is still 3 or 4 feet high, but does not present the sharp dangerous crested wave met below. Most of the land near this river is low and swampy until the hills are reached.

Half a dozen miles east of the Turama estuary lies the mouth of the Omati river, which is navigable by a steam-launch for some 50 or 60 miles. There is a large population on the lower part, and much sago on the upper portion of this river. It breaks up in low, abrupt, wooded limestone hills. It does not offer much to tempt the settler. Ten miles further east begin the many openings and deltaic channels of the Aird river. These are all united in the Kikori channel, which reaches low limestone hills, some 40 miles from the sea. It was followed by Mr. Bevan to the foot of the mountain ranges. There are a few strong tribes at the sea end of the delta, and there are a few smaller ones in the hilly country. There is little or no good land on or near the river.

Of the many inlets that are met with between the Aird and Purari deltas Port Romilly is the largest. It leads into the longest arm, the Kapaina, but even it, after a course of some 30 miles, breaks up into small creeks, in swampy ground that is hardly above high-water mark. Port Romilly receives, through the Baroi and Wame, a large quantity of fresh water from the Purari river. The Purari is, next to the Fly, the largest river in the Possession. Both seem to be always turbid. The Fly would, according to the calculations made, supply each person of the present population of the globe with about 120 gallons of fresh water a day, the Purari with about 70 gallons. The delta of the latter is about twenty miles broad, and nearly the same deep. It presents about half a dozen principal openings, but, as some of them are compound, they might be counted differently. The lower portion of the delta is hardly above high tide; the upper portion is covered by forest, but it is doubtful whether it is really always above flood-mark. The delta is occupied by a number of powerful tribes, who live chiefly on sago. It was ascended some three-score miles by Mr. Bevan. Beyond that point it enters among low sandstone hills. At about 70 miles it meets the great

sandstone range of Naivaia, which lies close to the river on its north side, and turns it away to the west. It is a strong-running stream, usually from 200 to 400 yards wide, and from 2 to 4 fathoms deep. Though not without some danger from hidden rocks and difficulties with eddies and current, it can be ascended by a steam-launch drawing 3½ feet of water for 120 miles, perhaps much further under favourable circumstances. It has been traversed for over 130 miles. There are no natives permanently resident on it above the delta until the furthest distance mentioned is reached. It passes through a sandstone country, which promises to contain deposits of good coal. It is not so inviting to the planter as the next rivers further east. Part of the Omati, the Aird river, several of the channels east of it, and the lower part of the Purari, were all traversed by Mr. Bevan.

The Bailala river opens less than a score of miles from the eastern mouth of the Purari. It has been ascended some 80 miles by a steam-launch drawing 3½ feet of water. There are two large villages at its mouth, but inland it is but sparsely occupied, only one tribe having been found, and that at a distance of some 40 or 50 miles from the sea. It traverses a large quantity of fine alluvial soil, clad for the most part with forest. There are many ridges and low hills on its course, so that it offers a variety of low alluvial and hilly soil, most of which is available to the settler.

Two rivers of importance open into the east end of Fresh Water bay. The most westerly one is the Tauri. The lower portion of this stream is held by the strong Mobiabi tribe, a people who, for the murder of a teacher of the London Missionary Society, were humbled and defeated by a force sent to punish them seven or eight years ago by the Hon. John Douglas. The steam-launch was able to ascend some 36 miles, but not without risk, as there are many tree-stumps in the channel. It traverses some fine alluvial unoccupied land, heavily timbered. It reaches low hills at about 40 miles from the sea. There is no permanent village above Mobiabi.

Half a dozen miles east of the Tauri is the mouth of the Lakekamu river, which enters the sea at Toaripi. The two rivers are connected by cross-deltaic channels, at least twice within the first half-dozen miles. The Lakekamu was examined for nearly 60 miles in a whale-boat, there being at the time no steam-launch available. Its course is very winding, but lies through much fine alluvial land, which alternates with great fields of sago trees. There are also many low hills and ridges near the river, which are covered by forest, and seem fit for agriculture. This river forks at nearly 50 miles from the sea. The eastern branch most probably drains the southern

and eastern sides of Kovio (Mount Yule). This river offers special advantages to the settler in the way of good land and convenient water-carriage. No inland villages were seen.

The Biari has been ascended some 30 miles, but would not be navigable to steam-launches beyond 12 miles. As far as examined, it lies in country rather low for European settlement. There are several villages on it, but they are far apart from each other.

The next river of importance is the Paimumu, which opens into Hall Sound. Its name in the Mekeo district is the Angabunga. It enters the mountain chain of the Mekeo range after a course of some 40 or 50 miles, and has been traversed among the mountains until it passes behind the front range of that system. It is a rapid river, and cannot safely be ascended for more than about 15 or 20 miles by launch. It passes through a large population in a fertile district, and brings down a considerable quantity of gold-dust. The upper part of its course, examined by Mr. Kowald, has not yet been put on the map.

The Vanigera river, which opens at Hula, is not navigable except to small boats and canoes. It has been often used as means of transport in descending by raft or canoe from the nearest hills of the inner range. There are many tribes and some good land on its course, but nearly all the best of the lower part is occupied by native tribes.

The Upugau river enters the sea east of Keakaro bay, at the village of Wailabanua. It has been ascended by a whale-boat to the nearest hills in front of the main range. It is a real mountain stream. It traverses a considerable quantity of good land, but a large proportion of this is occupied by a numerous population of natives.

A considerable mountain stream, called Evota, enters Table bay near its middle. It can be ascended only by small boats or a canoe, and has not been traversed.

There is no other river of any geographical importance—though there are many small streams of economic value, and convenient inlets of salt water—until we reach the Musa river, on the north-east coast. This river has two openings, the principal one in longitude 148° 57′ 30″, and latitude 9° 2′. In the absence of a steam-launch, six days' hard work took a whale-boat 36 miles up this river. It was flooded then, and there was very little land that was not more or less covered by water. It curves round Mount Victory, and no doubt drains a large part of the northern aspect of the central main range. It is thinly inhabited, as far as it is known. It is easily navigable to a steam-launch. At the highest point reached it was 80 to 100 yards wide, and from 2 to 3 fathoms deep.

The Kumusi opens into the sea in longitude 148° 16′, and latitude 8° 27′.

It has been traversed for about 50 miles by its course. It was still large enough to be followed up by the steam-launch, but not without much risk. The lower part wends its way through many sago-forests and swampy places, but the upper part proceeds through a fine and picturesque country with alluvial plateaus covered by forest, and with fine wooded hills in the distance. The upper portions seem to contain considerable numbers of natives. There are few places more inviting to the settler than this river. It is a real mountain river, and probably drains the adjacent sides of Mount Victoria and Mount Scratchley.

The most northerly river of geographical importance on this coast

MEN AT MITA.

is the Mambare, which opens into the sea within 6 miles south of the British-German boundary. It is thus well inside the territory of the Possession at its mouth, and its course lies south-west. The first 24 miles of its channel lie through low lands and sago-fields, which are large and many; then it traverses fine alluvial flats, and enters or skirts large hills at 40 or 50 miles. There are several villages on its course on the first 36 miles, but none were seen above that. The steam-launch ascended to near the foot of the first hills, beyond which the current is very strong in the rapids. It seems to drain the eastern aspect of the great north range of mountains called Wasigororo.

On these three large northern rivers good terms were established

at a first visit with all the natives, without any preliminary hostility, although a great many of them came forward armed to the teeth, prepared to do battle on the spot.

The Ikore river opens nearly 1½ mile beyond the British boundary and has been ascended for 7 or 8 miles, apparently into British jurisdiction; but its examination was not continued, as the natives were thievish, and difficulties were likely to arise with them. They were therefore left until their nationality should be better determined, as they live on the frontier, and probably cultivate on each side of the boundary-line.

A small stream from Hydrographer range, and called Tambokoro, enters the sea at the point named Cape Sudest by D'Entrecasteaux. The Ope is a small low-country river of only local importance, which enters the sea in front of Gumboro hill.

It will thus be seen that of the rivers of the colony the Fly is navigable to steam nearly 500 miles; the Morehead and Purari for about 120 miles; the Bamu, the Omati, the Aird, the Bailala, the Lakekamu, and the Kumusi, for say 60 miles; the Tauri, the Mambare, and the Musa for about 40 miles. As all these rivers come from the great heavily timbered, lofty mountain ranges, they are generally rapid in their flow, and are subject to sudden increase of their volume, as their courses are comparatively short, and the rainfall is great in the interior. The Fly certainly brings a great deal of water from both Dutch and German territory; the Purari in all probability does the same from the German colony. None of the others go beyond the boundaries of the Possession. Changes in the coast-line would seem to be inconsiderable in recent times on the north-east coast, except in the neighbourhood of the Musa river, where the sea seems to be at present gaining, if it is safe to judge by fallen timber.

It is a peculiarity of the large rivers of the north-east coast that they happen, at this stage of their growth, to be all three opening on points that they have built out to sea, and not in the bights of the bays that lie on each side of them. This is not the case with the gulf rivers. The sea would seem to be gaining on Kiwai Island in the Fly estuary, apparently from the subsidence of that part of the coast. It would appear that one or two islands nearer to the sea than Kiwai Island have disappeared altogether since the *Fly* was there nearly fifty years ago. Great numbers of coconut-trees have been washed down on Kiwai itself, and now lie in the river channel. Cape Blackwood, however, although completely exposed to the ocean, and soft and low, seems to occupy the same position as when the officer whose name it bears observed there half a century ago. At most places in the gulf there is a higher margin near the sea, with lower and more swampy land behind it,

which often for 10 or 20 miles is not above high-water mark. This is covered by low palms, by mangrove, and, when drier, by sago-trees.

The material out of which these great mud swamps of the west are built is principally brought down by the rivers from the interior. There are a few exceptions to this. On the coast west of the Wasi Kussa half a score of miles, there can be seen at times a deposit of small, common, light marine shells, several inches thick, which become mixed with a certain amount of mangrove mud and coral sand detritus, and build up the shore-rim to slightly over high-water mark. In raising up the great mangrove flats, like those of the Purari delta, the place of the earth-worm is taken by

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industrious crabs. These excavate subterranean chambers and passages, and bring the mud they remove to the surface to build up little towers or mounds of it, often 20 to 30 inches high, and 10 or 12 inches in diameter. The crab has a passage up the centre of this mound from his subterranean haunts, and can often be seen sitting on the top dry, proud, and comfortable. The excavations below are always to some extent filled up by deposit from the mud-charged water of the river, so that the part on which the crab rears his tower will not again quite resume its original lower level. This crab is thus a useful artificer, but he is so knowing that we have not been able to secure a specimen for classification.

The mountains being steep and the rainfall great, there are many traces of extensive landslips to be seen on their faces; this is Nature's way of blasting and loosening the material to fill in the swamps below. In some of the small watercourses near the great mountain ranges, there are, however, many immense blocks of stone that apparently could hardly have been brought there by any flood in those streams, nor by landslips from the hills near them—at least when the latter had assumed their present form. It is not safe at present to say anything of these beyond mentioning their existence.

To sum up this brief glance at the physical aspects of the country, it may be said that probably half of the whole area may be mountainous or hilly, and that the other half is partly swampy, partly alluvial. It, as a whole, is exceedingly well watered.

Before quitting the more strictly geographical part of the paper, it should be stated that the Possession has received valuable assistance in such matters from Mr. McDowall, Surveyor-General of Queensland; from the Royal Geographical Society of England, in a liberal grant of instruments; and from Admiral Wharton, hydrographer to the Admiralty. With the latter was arranged, four or five years ago, the system of nomenclature that is practised. It is, briefly, to give native names wherever they can be found. The only exception is to retain the old historic names, like Cape Blackwood, Port Moresby, Cape Nelson, the Owen Stanley Range, and the D'Entrecasteaux group.

## II. Fauna.

There are no great beasts of prey in the country. The largest indigenous animal is the wild swine. These are abundant in many districts, generally of the colour of a hedgehog, but they are very shy and fleet, and are not easily taken. The pig would appear to have been long domesticated. In some districts, as at Silasila and the Bennet islands, they are black, with a high mane and short body and legs. All are very sagacious. On Mount Kowald there was seen a marvellously well-built house constructed by a pig, apparently out of motherly instinct. The animal had broken off twigs from the undergrowth along the path for a considerable distance, so that it was thought there must have been a number of natives there; these twigs, usually from 1 to 1½ foot long, were laid down flat, the one on the top of the other, in two rows until they met in the middle, leaving a space into which the pig could enter from one end, which was left open.

There are several different species of wallaby, the larger light-coloured ones on the low grassy lands, the smaller and dark specimens in the

forest and higher lands. The bandicoot is plentiful. The echidna is not common. There are several indigenous rats and tree-kangaroos, and cuscus, and not a few squirrels. There was no native cat, but the howling, non-barking, orange-coloured dingo is found wild on the top of the Owen Stanley Range. There are no deer and no monkeys; no representative of the ox, horse, sheep, or goat.

Snakes are numerous, and many of them are poisonous. In certain districts the adder is very common, and its bite is always deadly. Fortunately, the small crested or horned variety seems to generally lie coiled up with its head in the centre. The brown variety often lies bent like the letter "U." One day in the Doura district a coloured man on the march suddenly made a great bound to one side, and then stood and yelled, "This is the twelfth time!" It turned out that he meant it was the twelfth time he had put his naked foot on a snake. Fortunately for him, in this particular instance his great flat foot so completely covered the adder, which was coiled up with its head in the centre, that it could not raise its head to bite the sole. It was speckled with dark and yellow points, and had selected, as they often do, a spot of ground on which to coil itself which was so like its body in colour that one could hardly notice it. A blow with a cane fractured its spine, on which it savagely and repeatedly dug its fangs into itself. A black snake of the country is also very poisonous in certain districts. Whip-snakes are common almost everywhere. There are very large non-venomous carpet snakes. There is no rattlesnake and no cobra; but it appears that a person sometimes dies within two hours of being bitten by some of our worst snakes. No European has died of snake-bite in the colony, accidents of this kind being confined so far to the barelegged native. The crocodile infests all the coasts and rivers, being met with in the latter far away among the mountains. Great specimens are also seen in the D'Entrecasteaux group, away from all fresh water. No case has been recorded in which the crocodile has attacked a person ashore in the Possession, but it frequently does so in shallow water. It lies in such a position that it often tears horses and cows if they go into the water to drink or cool themselves. Several people have escaped, or have been rescued, after they were being dragged away by a crocodile. In some villages palisade fences, in others a stone wall, is built to keep out the crocodiles.

The birds of the country are, in the opinion of Mr. C. W. de Vis, who has examined the official collections, not nearly all known yet, but even those that have been already described are enough to make New Guinea the most interesting country in the world for the ornithologist. The number of the birds of paradise is being steadily added to, and there

still remain numerous great ranges and districts in the interior that are totally unexamined, on which there will certainly be found more of these beautiful creatures; for one of their special peculiarities is that the locality frequented by many species is very limited in area, probably to some extent determined by the presence or absence of food, and perhaps in some degree to the fact that the rich and beautiful plumes of many species rather unfit them for travelling far. Birds of paradise have not yet reached the Louisiades; only two have got as far as the D'Entrecasteaux group, and strange enough it is that those two are not found on the mainland opposite. The hornbill, found everywhere on the mainland, lives in the D'Entrecasteaux group, but not in the Louisiades. The white-crested, most beautiful great goura pigeon is not found on the south coast at all, nor below Goodenough bay; and the grey-crested species has not been seen north of that. On the Purari river the turkey is common, but the scrub-fowl has not been met with there. In the central district both are got; but the turkey is not very common, and is not got in the islands. There is an endless variety of doves and pigeons, no doubt many still unexamined. The largest bird is the cassowary, of which there are several varieties. It is, no doubt, very nearly related to the emu of Australia. It is a bold and pugnacious bird. Mr. Kowald witnessed a terrific combat between a cassowary and a wild boar, in which the biped was well able to hold its own. Although hardly made for swimming, it crosses the Fly river at any place, though it may have to swim a mile or so at a time. Mr. Cameron met one crossing a river about two years ago; they pursued it in the whale-boat, but they failed to capture it; although it had but little the start of them, it managed, greatly distressed, to reach the bank, when it speedily darted out of sight. To the natives it is the most useful of all birds, as they prize its flesh, use its bones to make daggers, spoons, knives, and forks, and its feathers as ornaments. It is not found on the islands. The natives often tame it and many other birds, but we have not seen them with a tamed bird of paradise, and very few natives have ever seen an egg of the latter family of birds.

Immense collections of insects have been made, but by far the greatest by the enthusiastic and industrious Dr. Loria, of Florence. His collections have not yet been examined, but, to illustrate what may be expected from them, it may be mentioned that in the Meroka district, near to which Mr. Forbes was camped, Dr. Loria obtained 700 moths in one night, of which he believed nearly 300 to represent different species or varieties. Many of the beautiful butterflies of the interior have not yet been examined. The land shells that have been collected by government officers have been studied by Mr. Hedley, of the Australian Museum, and

have proved to be of much interest. Some of them show relations, like the alpine flora, with Hindustan, and others with the Malayan archi pelago.

## III. Flora.

Many valuable collections of plants made by D'Albertis, Armit, Forbes, and others, were examined before the establishment of British New Guinea as a colony. Nearly all the government collections have been studied by Sir Ferdinand von Müller, and the few brief remarks that follow are to a large extent from his notes. Practically all the hills and mountains are covered by forest, and most of the low country as well. On some mountain ridges there is a picturesque crest of pines or

SCENE AT KITAVA.

of palms projecting clear over all other trees near them, standing out boldly into the sky.

The most interesting specimens were those brought from the Owen Stanley Range at altitudes varying from 8000 to 13,000 feet. Amongst these were nearly fourscore flowering plants; amongst them were two new genera, one allied to an Italian, and the other to an Australian genus. Of these endemic plants no fewer than nine were of Himalayan type. The character of the flora at the highest altitudes was determined by a number of species of ericaceous plants, many of which, in the form of shrubs and bushes, were almost completely covered by whitish blossom. In fact, the appearance of the top of Mount Victoria reminded

one forcibly of the flowery Botany bay when at its best. These ericaceous plants were afterwards found to be represented on the top of Kovio (Mount Yule)—a circumstance which shows it to be not very far short of the top of Mount Knutsford, on which they are first met at about 1000 feet from its highest point. But the majority of these highland Papuan plants represented species found in subarctic regions, or in those of the south of Australia and New Zealand, and comprising such common things as ranunculus and veronica. The difference in latitude was thus found to be an equivalent to the difference in altitude in the two zones. These plants had not before this been found so near to the equator. Among them were also four Bornean plants found nearly 50 years ago by Sir Hugh Low on Kini Balu. A few British plants were also in the number, such as dandelion and daisies.

One peculiarity of the vegetation from, say, 9000 to 11,000 feet was a very abundant climbing thin bamboo, which ran over the tops of trees, and formed such dense undergrowth that galleries had to be cut through it for the passage of the party. Below the white ericaceous plants, some 1000 or 2000 feet, many places were richly sprinkled by the red blossom of rhododendrons. It does not appear that anything very remarkable was found in the grasses from the top of Mount Victoria.

Some seventy species of ferns and lycopods were brought from the same elevation. Among these, Mr. Baker of Kew found some nineteen new, and therefore we may say Papuan, forms. One of the most interesting members of this collection was the British male fern, which was not before suspected of having such a habitat. There was also the *Lycopodium alpinum*.

The botany of the lower plateaus naturally is of greater economic, though of less scientific interest. It is rich in Sundaic forms, even as far as the Louisiade archipelago. Several species of saponaceous trees have been identified, from which, in all probability, commercial gutta-percha could be obtained. There are very numerous species of fig trees, in large numbers and widely distributed, and the probabilities are strong that a rubber industry could be established in these.

There are more indigenous grasses than might have been expected, and some of them seem to be very good for pasture.

Thirteen members of the vine family are known, some of which might be useful for grafting purposes. Grapes from imported vines have been grown at Port Moresby, but at that low altitude there is a decided tendency to produce wood and leaves instead of fruit.

Among timbers, red cedar is not rare. It is the same tree as the Singapore cedar, but in some districts at least it appears to be of soft quality. Ebony occurs on the east end hills, and at Murua and Kiriwina,

but not in any great quality. Evergreen oaks, in some half-dozen species, are plentiful.

Several species of eucalyptus trees grow on the lands near the coast, usually on dry and poor land. The trees are stunted, and are not of much use as timber. The common tropical sea-coast trees, like the calophyllum, the Polynesian chestnut, the barringtonias, etc., are abundant. The sandalwood of the Possession seems to be a distinct species. It is a fairly marketable article, and is exported for the Chinese market.

Among lowland plants of interest the lotus deserves mention, growing in great beauty and perfection on the middle Fly. Fibre plants are

KADAWAGA KIRIVINA.

represented by the banana, hybiscus, pandanus. As these plants are indigenous and the fibre good or fair, they could perhaps be utilized for commercial purposes. Most of the food-yielding plants and trees are mentioned further on under the item of food. Twice when travelling in a whale-boat we have observed a singular botanical phenomenon, once on the east and once on the west side of Fergusson Island; this was a perfumed shower. A narrow-travelling shower in fine weather came off the island out to sea a few hundred yards, and the rain was laden with perfume, apparently from the blossom of plants on the island. It was so noticeable that all the boatmen ceased pulling to discuss it the first time we experienced it.

## IV. Natives: Race and Personal Character.

The natives probably number from 300,000 to 400,000. This is, however, a mere estimate; but it is made in the full knowledge that the numbers of an aboriginal population are, as a rule, unless heads are actually counted, put much too high. The majority are of a rich or dark bronze colour, but it varies from a brown, that might be called black, to a yellowish brown. The darkest people are confined to the gulf and Fly estuary. Inland tribes at the British-German boundary, at the centre of the island, are of a light bronze; the Tugeri, the tribes on the Morehead, at Biroe on the upper Purari, and those near Kovio (Mount Yule) are much the same colour as the dark brown of Port Moresby; on Mount Knutsford in the Owen Stanley Range, on Mount Maneao, and up the rivers of the north-east coast, the colour is about the same. Only in the gulf and near the Fly estuary is the blackest population met with.

Taken all round, they are smaller than the nations of Northern and Central Europe. They are as large as Indians, but not nearly so heavy and muscular as Fijians, Samoans, and Tongans. The black people of the gulf are often tall, with long and free-playing limbs, and good arms, but with the usual coast tendency to flat chests and thin legs. Their women are almost always remarkably spare, with long, wiry limbs, straight, hard, and angular—a contrast to the rounded forms of the lighter-coloured women. The rarefied air of the mountains, and the constant climbing of their slopes, correct these defects of the chest and legs in the tribes of the interior, who are decidedly better chested and better limbed. In the central and eastern districts the men are as a rule smaller, especially in the Louisiades; but there are some very strong men in the interior, on the north-east coast, and on the northern islands. In the west, the coast tribes resemble more nearly in colour (though they differ in many other respects) the natives of the Torres Straits islands; but the people of Nada and Kiriwina are decidedly lighter than their neighbours, the Solomon islanders. It may be mentioned that albinism is not uncommon. In the east end of the mainland, and in the islands, there are not a few albinistic people with pink-coloured skins and reddish-yellow hair. The olfactory organs of the European are seldom offended by the cutaneous evaporation of the Papuan, unless the latter wears clothes. The cutaneous exhalations are certainly less offensive than from the islanders of Torres Straits. The natives of the Possession vary greatly in features, so much so that a visitor might fancy he met with types of different races in each village of large size; but the diversity in any given district is perhaps after all

not greater than in most Pacific islands, or indeed than in perhaps any country in Europe. The black people in the west have small heads, very prominent Semitic or almost aquiline noses, good high foreheads, though often rather narrow, bright dark eyes of an average size, and the small weak lower jaw which is characteristic of the whole Possession. Elsewhere the head looks larger, perhaps only because it is broader, and the nose is smaller. The mouth soon becomes large and flabby in the adult east of the gulf, from the use of lime and betel; but in the natural condition it is not unlike a European mouth. The native face is generally pleasant-looking and expressive. The children are often very pretty, with delicate mouths, bright soft eyes, bronze chubby faces, silky features, and velvety skins.

To myself it has always appeared that the eye of the Papuan child is perhaps unique in beauty. It is very often of the soft, deep, bloomy tint of the ripe blae berry of the Scotch woods, a shade that cannot be given in the iris colour-plates of the anthropologist, and which has probably never been put on paper or canvas. Unfortunately, this bloom is like all others in being ephemeral. It becomes changed by the sixth or eighth year into a much harder, less liquid, hazel-coloured eye, often indeed of large size, and strikingly expressive.

Taken as a people, they are remarkably smooth-skinned, hairy individuals being uncommon. The hair in its natural condition is very dark, and generally frizzled. As Sir Clements Markham has told us that they were named "Papuans" from the Moluccan word used to describe their frizzled heads when they were first seen by Meneses, the Portuguese commander, in 1526, it may be as well to say something here as to the mode of wearing the hair, as the national appellation is founded on this personal characteristic. The most westerly people met with, the so-called Tugeri tribes from across the British-Dutch boundary, dress the hair in small cords, into each of which is plaited what seems to be a kind of sedge. At the lower end the sedge is twisted up, so as to form a ball as large as a walnut; at a little distance each man looks as if he wore on his neck a great bunch of grapes, which would prevent him from turning his head round. The natives on the Morehead river wear it generally shorter, but some of them in the Tugeri fashion, while others have it in plaited or felted pencils, with a band of sewn pearl-shell across the forehead. On the lower Fly, it is usually worn short for the sake of comfort and convenience; on the upper Fly, short, or plaited with fibre into small pencils. Further east, the mop is more common, the hair combed out as straight as a spirally twisted hair will remain, but it is never formed into the large recurved flocks of the Fijian mountaineer. In Cloudy bay it was seen made into six or eight

rods of 2 or 3 feet in length; but it is sometimes felted there and elsewhere into one unhandsome queue an inch thick, and two or three broad. Sometimes they plait into it one or two of the cervical vertebræ of a dead spouse or other relative; or it may be ornamented with ruffs, shells, feathers, flowers, fibres, the tails of animals, or other ornaments. Occasionally it is worn in a net, or tied up gracefully into a ball or knot on the occiput or on the top of the head. It is often cut off in mourning; the head of a woman is usually shorn when she becomes a wife. Bald-headed men are not altogether uncommon. With the weakness of Julius Cæsar, they try to conceal it, by wearing ornaments and caps of native cloth. Unslaked lime is a delicate luxury, and is not wasted on the Papuan head. It is only on great and rare occasions that the head is oiled. It is periodically closely examined by a relative or friend, who is careful that on these occasions nothing is wasted, as he is entitled to what he can catch, and he does not, like those in the classical riddle, throw away his capture. The hair of children is shaved or cut in fantastic fashion, and some tribes add to the height of the forehead in male adults by shaving an inch or two in front. Straight or wavy haired people are more common in the central and eastern districts, and in the islands, than in the west, where they hardly, if at all, occur. In them the hair is often lighter in colour. As much as five per cent. of straight-haired people have been counted at public meetings from the central districts as far east as Gawa, one of the Bennet islands.

No clear trace of a Negrito race has up to now been met with in the Possession, so far as is known to me; and we have no ruins or architectural remains of a higher or older race. Mr. Theodore Bevan, it appears from his book, noticed near the coast something which he thought to indicate special Dravidian affinity. It has not come under my observation. Nor is anything special known to me that could, from the Papuan point of view, support the opinion of Professor Milne, that there is a special relationship between the Papuan and the hairy Ainu. According to a recent writer in the *Edinburgh Review*,* this opinion seems to be based largely on early feminine maturity, and on inadequate protection against climatic severities. Female maturity is not remarkably early in New Guinea, and it may be doubted that any aboriginal people in the Stone Age have in any country built larger or better houses or finer bridges than those of the Papuans.

Language has not so far given any indication of a distinct and earlier race. It is not quite safe to accept the more precise and symmetrical ethnological distribution of the native that has been

* *Edinburgh Review*, No. 367, p. 193.

given by certain writers on British New Guinea. It has been, for example, stated with authority, and the statement, therefore, requires notice here, that the pure Papuan type "is only to be found within a small area in the interior and in the north-east; but the type prevails with modifications throughout almost the whole of the territory; that in stature they are short and squat, low foreheads, and prognathous." * This is not a good nor a fair picture of an average native of British New Guinea. It is said also that "the Malay element appears to predominate in the tribes to westward, and in the tribes at Aroma and Cloudy bay." The black, small-headed, big-nosed Fly estuary man, who can count

THREE PRISONERS FROM WOODLARK ISLAND.

only two, and has no clay pot and no sailing canoe, has no more resemblance to a Malay than a Scandinavian has to a Hindu. The truth is that, at present, the observed facts at disposal do not warrant the drawing of any large generalizations as to the affinities between our natives and other races. Many more observations must be collected on the spot before fully reliable scientific conclusions are formed.

It is much to be feared that we are all too apt, in hunting after types and racial affinities, to hurry to hasty conclusions. We often fail to attach sufficient importance to the changes that could be produced on the human form by, say, emigration from the monotonous vegetative life

* 'Report on British New Guinea,' by G. Seymour Fort, Victoria, 1886, p. 38.

of the mountains to the more active intellectual trading life of the coast; or by removal from a sago-eating to a yam or taro feeding district; or from brackish to pure mountain water, or *vice versâ*. These, and scores of other considerations, have to be carefully weighed in New Guinea, and the process requires time. At present it is perhaps better and safer to speak of the natives in this paper untechnically as a whole, in considering their character and habits.

In temper they are cheerful, lively, and full of fun, and are generally so contented as to offer a refreshing contrast to the more complaining Britisher. They are very credulous, prepared to believe and to act on the wildest and most improbable rumours. This is the more remarkable because they have only a Cretan regard for truth. They should not be judged harshly on account of their mendacity. It is of all errors the one that is most human. The psalmist has groaned, "Omnis homo mendax," and he was a good judge of man; the poet of humanity has said, "La frode, ond' ogni coscienza è morsa;" and one that was not far behind them in his knowledge of human nature wrote, "Even ministers they ha'e been kenned a rousing whid at times to vend, and nail't wi' Scripture." His proneness to lying notwithstanding, he is sometimes remarkably open and truthful. Prisoners that have gone out to work in irons have asked that the irons should not be removed, because they felt they would run away if they were taken off; and old prisoners have beaten new ones that were proposing or trying to make an escape. In the great majority of cases the convict confesses his guilt, and describes the crime or offence.

The mendacity of the Papuan can be put down to humanity, but his credulity can be accounted for only by the vividness of the Papuan imagination. But although it is as natural to the Papuan to tell a lie as it is to all other people not educated into our conventional regard for truth, a person that is accustomed to deal with him can, in the majority of instances, say whether a native is veracious or not, and can generally extract the truth from him. Their natural intelligence is of a high order. The dark Fly estuary man is perhaps quieter and more sedate than others.

No teacher ever had before him a more bright-eyed and intelligent-looking class than the fifty or sixty young Papuans that can be seen at school at Dobu and Port Moresby. The young men are all very clever, and willing to be taught anything useful, and soon learn how to handle tools, or to speak another language than their own. It does not seem to be the case that children fall away in their studies and receptiveness after ten or twelve, to the extent they generally do in many other tropical countries. But they, of course, are deficient in application and

perseverance in work or study. They are capable of being made good teachers. Some of those educated by the Rev. W. G. Lawes are doing very good work. It is sometimes very striking to see how an untrained native, who knows much less than he thinks, eagerly undertakes to teach new tribes; as when a man of active imagination explains, in good faith, to another how the cow's horn, used for signalling purposes, is the tusk of a great swine.

An excellent characteristic of the Papuan is that he is not quarrelsome nor violently passionate. Personal disagreement is rare in the constabulary; the men are seldom subject to the fury of violent anger, and they do not often sulk. To run amuck is unknown to them. Suicide is very rare among them, compared to what it is among Fijians, for example, and is far less frequent than among the Line islanders. When it does take place, it is, as a rule, the outcome of one of the strongest and best characteristics of the race—from affection. Occasionally a woman will climb a tall coconut tree, and kill herself by jumping down, because she has become convinced that she can never again meet among men with a husband so good as the one she has lost. This family affection is so strong as to be not infrequently an impediment to the employment of men away from their own districts. It is not often that a man cares to remain longer than one year in the constabulary, because he is separated from his family and friends. The London Missionary Society finds it difficult to get the wives of native teachers to live in strange villages for the same reason. The strong feelings of affection that the Papuan feels for his relations and neighbours does not, however, prevent him from doing to others what appears to us terribly cruel things. On the contrary, it helps to move him to perform very bloody deeds, in taking blood-payment for the death of one near and dear to him. Nevertheless, they are not by any means a naturally cruel people. It must not be forgotten that in certain circumstances murder, deliberately planned and ruthlessly executed, is, according to their code of ethics, a conspicuous virtue, a moral duty. A homicide can sometimes be paid for in property, but the more natural and more common method is to have blood for blood. Men notorious as murderers were sometimes killed in the public interest.

Sir George Grey, writing many years ago, said, "I have known Papuans also who exhibited all the traits of thoroughly devoted men." The Rev. W. G. Lawes has written of them, "Instead of being described as 'savage,' 'hostile,' and 'treacherous,' they should in justice be spoken of as kindly disposed and friendly on their first intercourse with white men, but generally suspicious and watchful."

On the other hand, they have been described as treacherous,

aggressive, bloodthirsty, and cruel. Probably there are all sorts of personal characters among them, but, taking them as a class, they appear to me to be remarkably free of treachery. Once, on the Fly river, in a district where D'Albertis had several seriously hostile encounters with the natives, we unexpectedly received a shower of arrows among our party; and once, in ascending one of the gulf rivers, and in coming suddenly and without any warning on a number of natives engaged near the bank, we were met by a shower of arrows as soon as we appeared; but during the many hundreds of nights that we have been camped in the bush, no treacherous attack has been made on us, although we have several times, without knowing it, camped in the dark near large tribes. We have never been treacherously led into any ambuscade.

Like white children, natives are sometimes thoughtlessly cruel; that they are so naturally can hardly be believed by any one that has seen their touching tenderness of heart. It has happened frequently that strong men, when they have finished their service in the constabulary, and have come to say good-bye to the administrator, have done so with tears on their cheeks. Several times within the last six years individual natives have said to an officer of the government, when it was thought that danger was acute and serious from hostile natives, "if they kill you, they may kill me too," and they have kept their ground when they could have safely fled. It is impossible not to admire, if not even to envy, the courage and presence of mind that have been shown by many members of the constabulary, especially by such men as Tom Mawata and Kasavi, representatives of the black man in the west, and Bonari and Kiwiwi from the east of the Possession. Officers of the government have, when accompanied by only a boat's crew of Papuans, or even fewer, visited strange tribes, arrested natives in new and unsettled communities, and carried them off successfully. I have never seen them flinch or become dismayed when under European leadership; and scores of times natives, not in the government service, have accompanied officers of the government to tribes unfriendly to themselves, and have gone with them for journeys under circumstances that would, had I been in their place, have been too much for my courage; and this they have done, too, scores of times, with little or no previous personal knowledge of the officer.

When Mr. Maudsley some years ago read a paper connected with British New Guinea before this Society, it was stated by a gentleman present that the party that ascended the Owen Stanley Range were accompanied by carriers from Port Moresby. It was, perhaps, quite a reasonable supposition, but it was incorrect. As a matter of fact, the Port Moresby men refused to go, and the natives that went to the end

of the route had only learned to know their leader during the journey. This does not affect the task of the European part of the expedition one way or another, but it is creditable to the natives in question that they performed the journey, and stuck to their leader to the end. It throws light and sunshine on the Papuan character. But were there no shade light could not be appreciated. One of these men, so faithful on the march, stole the frugal evening meal of his leader on the top of Mount Victoria. We were all very hungry, and this man was very weak, but he stole from the strongest member of the party, who he knew would not inflict personal punishment. Only once has it been

WOMEN OF SAMARAI.

alleged that any constabulary retreated before opposition, but if they really did so it was only to gain greater impetus, for they immediately afterwards cleared the hill of their assailants. Once a number of carriers deserted a government officer, but some of the same lot stuck to him till the journey was finished—a circumstance that shows in still brighter colours that those that remained were, to use Sir George Grey's phrase, devoted men.

The most marked mental characteristic of the Papuan in his natural condition is his shy timidity. This is always well shown on a first visit, and very often on subsequent ones, to new tribes. Where the community is very large, and the visitors very few in number, the men stand on their guard with their weapons either in their hands or at some

convenient spot near. If the tribe is smaller, but still powerful, they will assume similar behaviour, but they may send away the women and children. In small tribes, all seek shelter in the forest, and leave an empty village to the visitor, the doors closed, and a taboo of boughs or trees on the approaches, if there was time for this. A few men will remain not far off to observe what goes on. After some shouting and encouragement, one or two men are generally induced to come in, sometimes with green branches in their hands, and they are usually soon followed by others. In a few cases on the north-east coast, the men have retired, and women and children have come to meet us. A Papuan requires some time to divest himself of his timidity and suspicion.

It is this quality, shy suspicious timidity, that renders him so ready to use his weapons on a stranger. The spear and the arrow are silent and swift messengers, and a life of warfare in a forest-clad country has led the Papuan to know as well as any tactician in Europe the advantage of delivering the first blow; and this he can do so quietly, and with so much ease and safety to himself, that the temptation to use his weapon, and to become master of the situation, is difficult to resist.

It is easy to mistake this as the outcome of treachery, cruelty, and aggression. It is, however, not so; and the results are not the same. By just and fair treatment, suspicion and timidity can be overcome; but it would be difficult, though at the same time it might be more creditable, to deal with a people naturally treacherous, cruel, and bloodthirsty. Next to shy suspicion comes avarice. Papuans do not give presents. In the rare cases in which they do so, they expect or ask for more than an equivalent in return. They are not profuse in offering hospitality for the same reason. They run all the risks of stealing from avariciousness; they have several times murdered Europeans from the same motive. This predominant trait is often very provoking, because it is so pronounced even in the infinitesimally little. The piece of tobacco given to a Papuan with which to charge the pipe for common consumption will be small indeed if he does not secrete a portion of it between his fingers.

The extent to which the mind of a Papuan crowd is impressionable is sometimes very remarkable. Many hundreds of people have turned out to weep and beat their breasts when a member of their tribe has been arrested. A whole tribe has been moved to tears when a few prisoners from a neighbouring hostile community have been brought past on the way to prison. Repeatedly, when in a new tribe a small boy has become frightened by the fall of a leaf, or something equally unimportant, the whole assembly have wheeled off like a whirlwind.

On one occasion when we were ascending one of the gulf rivers with

a strong rising tide, and did not on that account wish to stop at a very large village we were passing, a great number of canoes came out and paddled alongside up the river. A native in one of the nearest was, in the excitement of the moment, seized by an epileptic fit, and in two or three minutes, by the force of imitation, all the men in that canoe were lying in it convulsed as if each were separately possessed. But, on the other hand, instances of wonderful mental control are sometimes seen, perhaps the most remarkable of all in children. In the Mekeo district a strong tribe had been humbled and had fled. A volunteer native constable found a small boy of about seven in the bush. He put a string round his waist and walked him into camp before him, like a man driving a pig to market. That child maintained the most perfect composure and presence of mind, and though he thought he would probably be killed, he showed no symptom whatever of fear, but ready wit in asserting, what was not true, that he was the son of a friendly chief. In a heavy shower the late Rev. A. MacLaren and myself once entered, in unknown country on the north-east coast, a small house built on posts. In it were a man and a woman, with two children. The parents would not be comforted, but shrieked and fled, the woman carrying off a child at the breast. Another of six or seven lay under a mat and pretended to be asleep. We were kept there by a heavy shower for say half an hour, and that child kept up its heroic pretence of sleep all that time, and, it need hardly be said, it was not molested by us. Off the coast of Duau my boat was once visited by some canoes, and after one containing a young man and a red-haired male child about six or seven had left, another native whispered that the man was concerned in a recent murder. We gave chase, and succeeded in overtaking the canoe and in arresting the incriminated native. The child sat in the canoe and looked on like Diogenes in his tub. Another canoe was paid to take this potential St. Lawrence ashore to his friends.

On the north-east coast, on the Musa river, a canoe was met containing two men and a child of seven or eight. It hid below a mat and lay as still as death, with its thin legs projecting about a foot, all the time we remained with the men buying fish and trying to talk to each other.

This strange wild-beast sort of attitude in Papuan children is very striking and interesting. It probably could not be put on by European children, and is very likely an outcome of the fugitive life of the Papuan. It is probably assumed, however, only when the little Papuan cannot run away.

The Papuan, his light character and volatile disposition notwithstanding, is not incapable of searching intellectual speculation on his

own account. Recently the administrator was asked in the evening by the only real native potentate in the Possession, the chief of Kiriwina, to explain to him the relative position of Queen Victoria and of himself, as chief of that little group, with the head of the government of the colony and the chairman of the Wesleyan mission as intermediaries. After the gradations of authority were explained to him, he discussed the subject till daylight with his leading men.

On one occasion the administrator gave chloroform to a patient at Port Moresby, preparatory to performing an amputation. The spectators went afterwards to the Rev. G. W. Lawes and told him that "the Kovana" had taken the life out of the whole of the patient's body with the sole exception of the heart, which continued to beat, as they illustrated by a rhythmic opening and closing of their hands. They wished to know whether, if the heart also had been deprived of life, the operator could have revivified it.

A native chief, taking undue advantage of his official position, was demanding too much deference or service from his villagers, and threatened them with imprisonment if they did not comply. Some of them met and discussed the situation; they then sent a deputation to the late Mr. Frank Lawes, resident magistrate for the district, to say they had considered the subject, and had concluded that there was only one road to prison, and that one went through the magistrate's court. They wished to know if they were correct in this.

Little that is positive can be said about the religious belief of these people. Apparently they all, without exception, believe that man is compounded of a body and a spirit. The latter leaves its tenement during sleep, and at death does not return. Hence, in waking up a sleeper, they proceed to rouse him by degrees, that the spirit may have time to return and take its place. If a native brings a morning cup of coffee to the administrator, and finds him asleep, the cup is almost invariably set down, and the sleeper is left undisturbed. The spirit of the dead is feasted, that it may finally depart in peace, and care is taken that it is not lightly invoked. A ritualistic appeal is, however, made by some tribes to the spirit of an ancestor for his aid in obtaining a good hunt or a good crop. They do not seem to be idolaters. Generally the departed spirits go to a mountain-top or away to an island at sea. They are all bad, or the good ones are neglected, and only the bad ones are feared and placated. An epileptic fit is treated as if the patient were possessed by a spirit; they pull the patient's fingers, rub his stomach, and blow chewed aromatic bark over his body—a method that is widely spread, except, perhaps, among the dark men near the Fly, for driving away the spirit of the evil eye of the white man visiting new tribes.

In the islands and on the north-east coast the evil spirit of the white man is, in new tribes, mollified by spitting on him the chewed aromatic massoi bark. Clearly they think that spirits exist, and that they can be propitiated.

It can thus be understood that when a supposed dead man recently revived in the Kabadi district, the native psychologist could easily account for it on rational principles. It seemed to cause less wonder than disappointment, for he was a bad character of whom they were glad to be rid.

For us, now, one of the most important considerations is this: does the personal character of the Papuan enable him to take to the ways

BASILAKI.

of civilization, or is the tendency, with his shy and timid disposition, in the opposite direction? Like most barbarians, he has a keen sense of justice; he has a sincere regard for power and a wholesome dread of it; he promptly appreciates protection to the weak, and he as readily approves of the punishment of the powerful aggressor; he is prepared to comply with a public *force majeure*, and is becoming inclined, not only to assist in securing criminals, but even to seize them and hand them over to the government for punishment. He takes a keen and an intelligent interest in cases before the criminal court; he has often shown very surprising judgment in pointing out defective testimony, and in drawing attention to what was only hearsay evidence; and he has

frequently very judiciously selected the points the administrator should chiefly consider in dealing with a case of capital sentence. They knew no obedience to anything except their own desires; but they are learning to obey laws that they feel will be enforced. Many of them are fond of trading and visiting; others are glad to be able to plant food in quietness and to rear their families in safety, so that most of them are pleased to have peace. In short, they adapt themselves to order and to settled habits, and are receiving teaching and civilization in a way that is not far short of the wonderful. Can they survive contact with our ways? The weight of analogy would be against them. Much will depend on how we treat them; more will rest on the introduction or otherwise of our diseases. In some ways they have a better chance than the Fijian; they are more full of elastic vitality than any Polynesians, and have not the strong Fijian tendency to fatalism; their home is nearer the equator, and is to that extent likely to remain longer free from serious encroachment by the white races as permanent settlers. On the other hand, the Papuan is æons behind the Fijian in social and political development. The jump from barbarism to civilization is therefore much greater for the Papuan than it was for the Fijian, and he has been called upon to traverse a greater distance in a shorter period of time. The transition is therefore more rapid, and the effects should consequently be more telling on the constitution of the race. In disposition, and also probably in blood, the Papuan is more nearly related to his prolific neighbours on the west, than to the much finer, milder, and grander Fijian, and he may thus better stand up to civilization.

## V. Socio-Political.

Their tribal, social, and personal relations are of great interest, but are only imperfectly known to those best acquainted with them. The principal reasons for this are two—the diversity of language, and the consequent difficulty of conversing with the natives; and the fact that what is true of one glen is not, in perhaps the majority of cases, true of the next. Much even of what little is said here is therefore put forward with reserve, and as subject to future correction.

They live in village communities, small centres that are partly held together by the ties of relationship, and partly for mutual defence or convenience. These communities differ greatly in strength, some containing, perhaps, a score or two of individuals, others several thousands. The small ones, feeling their weakness, are more quiet, reserved, shy, and suspicious; the large tribes, conscious of the strength of numbers, are loud, presuming, and sometimes arrogant and warlike. But the

tribe or community is, in New Guinea, only a collection of the loose uncombined elements that by their union form the social compound. There is no keystone to keep in place the units of the social arch. The tribe has no real head. There Schiller could have said without any poetical licence, "Freiheit und Gleichheit hört man schallen." In the Papuan community one can indeed see freedom and equality in full-blown evolution. No one wishing to avoid trouble would think of contending that he was the superior of his neighbour; the only restraint on absolute freedom is fear—the fear of the club, spear, arrow, or black art of any one wronged or offended. There is no slave caste, but captives in war are sometimes kept in an inferior position. A love of freedom is innate to the Papuan, as it probably is with all barbarous people that have not been reduced to servitude. At first imprisonment was so ill borne that it appeared it would have to be converted into a system of relegation; but that was probably, to a large extent, the result of fear, as the prisoners are now very healthy.

No one has ever arisen there wise enough, bold enough, and strong enough to become the despot even of a single district of the mainland. The nearest approach to this has been the very distant one of some person becoming a renowned wizard; but that has only resulted in levying a certain amount of blackmail. In time of war some one is put more or less in the position of leader, but when the fight is over he returns, as did his curly-headed Roman prototype, to cultivate his patch like any other man. The only exception to this loose combination of society is in the Kiriwina group, where there is a chiefly caste, the head of which is treated with a large amount of outward respect, while he possesses little or no authority for good as a ruler, although the men used to transport him on their backs when he journeyed from village to village. The village consists of a certain number of families, and as a rule some one man is considered to be the head of each family; but his authority is so slender that it can hardly be stretched without snapping. In the household the authority of the house-father is, however, greater; but it is not very often exercised.

Hence the task of government is unusually difficult. There are no men, as there were in Fiji, for example, that are accustomed to manage the affairs even of a village, to say nothing of a district or province. No man has the self-confidence necessary to make him feel that he can exercise authority over his fellow-villagers. The government has to select men, to instil into them confidence in themselves, to instruct them in everything, to prepare them to receive responsibility, to teach them that when they are put in authority it is not done that they may benefit themselves and their near relations, or in order that they may balance

old accounts with former enemies or rivals. This sort of education demands time, and much patience and perseverance on the part of magistrates and others; but experience seems to show that the task is not insuperable.

The rise and fall of Papuan tribes and communities follow the same laws, but with infinitely greater swiftness, that regulate the balance of power in Europe. For a time some one tribe becomes aggressive, and seeks for special advantage, not only without compensation to its neighbours, but probably at their expense. The result is a combination against the pretentious power, which is then reduced to a condition of relative inferiority. This has been seen in several districts within the last ten years. So it has been with the individuals of a community; equality was so fully developed that it was not safe for one man to raise his head above the ordinary level of the sea of mediocrity. The Papuan barbarian has so much freedom that he may do practically anything, so long as he does not distinguish himself.

The island of New Guinea would have been a paradise for the European doctrinaires and constitution architects of the last hundred years, as they would have found there absolutely raw and unused material out of which to rear the ideal social and political edifice. It is the only country in the world in the present day where the subversive elements of Europe can see in actual living operation the state of society to which they seem to wish to convert the old civilization of the Continent. The social and political condition of the native Papuan therefore possesses a very special interest at the present time to all students of such subjects, surely the most important that can affect the material aspect of man.

The usual course of his life is something like this. When a Papuan is born, his mother will get up and probably proceed to her domestic duties before he is an hour old. The child will in certain tribes belong to the maternal tribe; in others, and more commonly, to that of the father. He remains at the breast until he is able to run and ask for it. Very generally the father carries him about and cares for him, while the mother is attending to household work or is occupied in the garden. He is transported in a little mat, in the arms, or in a small basket, or in a net-bag suspended from his mother's neck; when put to sleep, he can sometimes be seen hung up in a net like the worsted husband of Brunhilde in the Nibelungen Lied; or, when a little older, perched like a frog on his mother's neck, or on the summit of a huge pile of firewood on her back, as she returns in the afternoon from the garden heavily laden with the food and fuel of the family. In a few years he begins to hurl a baby spear at a running coconut, or to shoot

with a toy bow and arrow. He takes part in what are perhaps the prettiest children's games in the world, and is early supplied with a toy drum. When the little girl is six or seven, she begins to carry home food and water; and to perform her share in household work. In tattooing tribes, she is finally tattooed near puberty. In some places there is a certain amount of ceremony in admitting her to womanhood. The boy seldom joins in any laborious occupation. He begins early to take part in the dance, to catch fish, to hunt, to make twine and nets, to make love, and to fashion weapons of war. In many tribes, he is admitted to manhood with some ceremony. He may have to live in

HANUABADA, PORT MORESBY.

the bush for a certain time and live by his wits; or he may, without any previous segregation, have the clothes of manhood put on him by his father or uncle. In boyhood and youth there are but few restraints on his relations with the other sex, and at an early age he thinks, as he often thinks afterwards, that he has permanently placed his affections on one individual who is superior to anything else in the world. It is not often that a bride has been appointed for him at birth. He is in many tribes allowed to choose a wife where inclination leads him, and is never in this matter restrained by considerations of caste, and is probably not often influenced in his choice by mercenary motives as regards dowry, for dowry is certainly sometimes given, and marriage gifts are common; but there are often certain limits to this latitude

of choice. Mr. White states that he has found a pure totemism on Sudest Island, communities that have a clan crest, which seems to be some local animal; and that, for example, a white cockatoo man cannot marry a white cockatoo woman. It is almost certain that totemism does not exist on the mainland, and it requires further inquiry even in respect of Sudest. No Papuan can marry within the prescribed degrees of relationship. Some cannot marry into his own village, or into his own half of the village, or into the mother's tribe; others select their wives from certain fixed tribes, to the exclusion of others.

Nowhere in British New Guinea is it customary for a man to give his daughter or sister to wife without receiving some valuable return. The father is entitled to substantial presents in kind for his daughter, which he is careful to classify as gifts, and not as price paid; in some tribes the son-in-law seems to owe almost lifelong service to the father-in-law; a brother will exact property, or a wife for himself, in exchange for his sister, which is sometimes allotted to him by the father for that purpose. The bridegroom, if he has no house of his own, builds one for himself, his friends assisting him, he finding them food; or he and his wife live with his parents or with hers till a house is prepared, or till he inherits his father's, or a stall in the tribal dwelling, if he is, say, a Fly-river man. But in the gulf, the married man continues, in some of the tribes, to live in one of the great "man-houses," while the wife lives with other women in a "woman-house." The young man cultivates part of the land of his father, mother, or uncle; or he makes a clearing for himself in the forest land of the tribe, which, when improved by him, becomes his private property. The husband does the principal work of clearing the land, the wife attends to the planting and weeding. He hunts, fights, dances, travels, and attends festivals; she gossips, looks after the children, fetches food, water, and firewood, makes their clothes, cooks, cleans the house, and sweeps her share of the village square, if it is a sweeping village. After a short period of maturity, the house-father having settled his daughters by disposing of them to the best advantage, and having assisted his sons to set up an independent household, at an early age becomes an old man and dies off, his body being disposed of as the custom of the tribe requires, which is, however, never by cremation. There is no reason to suppose that the old are killed because of senility.

The institution of the sabbath, as a day of rest, is not quite new to the Papuan; but just as the Hebrew sabbath in frequency exceeded the Egyptian, so the Papuan sabbath of Keapara exceeds the Hebrew in dividing time into weeks of three days. The great majority of the

tribes, however, do not seem to have a regular week, and work or rest capriciously.

The marriage ceremonies are sometimes of considerable importance. Antenuptial chastity not being required by a censorious public, its absence does not bring on the woman the stern consequences it did in Samoa and Fiji. It is, however, ignominious among many tribes, though by no means in all, for a woman to have a child to a man that will not marry her. Illegitimate children are, therefore, sometimes destroyed, as they are amongst Europeans. In some districts, there are distinct traces of the custom of marriage by capture. After betrothal, and before the girl has been paid for, great liberty of companionship is permitted to the betrothed. The bride is covered with oil, clays, shell ornaments, and dogs' teeth necklaces, and enjoys a few weeks or days of great splendour. It is the domestic culmination to which the Papuan girl looks forward, and to which the matron looks back. Her hair is cut after marriage, and she becomes the hands of the household and family. She has too much to do, and therefore seldom objects to the husband taking a second or third wife, which he often does, if he can afford to pay for them, and has land for them to cultivate, or sago-trees for them to convert into food. The chief of Kiriwina, with a score of wives, each occupying her own house—for the wives are not always a happy family, and like to live apart—heads the list of polygamists; the next highest number known is five or six; many have two or three. There are very few men without one. It is very remarkable that, as a rule, the older and richer men retain their aged and faded wives with much fidelity. Beneficent people visiting and working among coloured races are often ludicrously keen in looking out for cases of cannibalism and female infanticide. In dealing with the latter now, it may be said at once that it is doubtful that infanticide is more common in British New Guinea than it is in Australia or Europe. Daughters are the servants of the house, and are the most valuable property the house-father possesses; he is not, therefore, likely, with a regard for his own comfort, with his extreme keenness after his own material interest, to destroy them. The abundance of wives demonstrates that female infanticide cannot be in any case much more common than male infanticide, and the latter is seldom alleged. In New Guinea, the want of food could hardly require that the numbers of a tribe should be circumscribed. The demands of the public safety of the community rather require that their number should be increased.

The Papuan young woman of the period is now the most productive element of trouble to the government. She begins to understand that the administration is paternal, and that she cannot by open brute force

be compelled to a distasteful marriage. In short, she often romantically runs away with the man of her own choice, disappointing some aspirant in her community, and leaving her father deprived both of her service and of the rich presents he naturally expected in exchange for her, or her brother finds himself without the exchange he hoped to give for a wife for himself. Hence uproar, muttered intertribal threats, much brandishing of spears, often ending in blows, and frequently in an appeal to the nearest government officer. The majority of the police cases that arise have their origin from trouble that is caused by or concerning a woman. It is true that in matters between Europeans and natives the native women are almost always on the side of peace, and they have frequently, with great courage, kept their men from making an attack. A woman has been known to save the life of a stranger by putting her own petticoat on him. It is often quite the other way in purely native matters.

It would be very unfair to the Papuan "dude" to not take some notice of him. Nowhere is he seen in greater perfection than in the Mekeo district. His head will be adorned with plumes of the bird of paradise; he wears a frontlet of white shell; his face and chest are smeared with soot, lime, or oil and clay; a pencil of shell 6 or 8 inches long transfixes the septum of his nose and projects beyond each cheek; on his neck are strings of shell, and he has several bracelets of shell and plaited fern on his arm. Round his neck are suspended the tails of pigs, the heavy-smelling glands of the cuscus; and bunches of aromatic herbs, supposed to be as grateful to the Papuan fair as is valerian to the cat, hang down his back. But the distinguishing feature of his vanity is his waspy waist. He represents the *ne plus ultra* of tight lacing. His waist is drawn in by a girdle of native cloth till the stomach and liver project and hang over it. He looks as if he were being elevated by the waist as he gingerly trips along. One would think that his object was to ligature the aorta, and cut off all blood-supply from his lanky legs.

The gulf dandy wears ruffles of fibre on his ankles, which gives him the appearance of a foot-winged Mercury as he strides or runs along the beach. His ruffles are supplemented by quaintly carved bark girdles, broad enough and tight enough to restrain the natural movements of the body, and to give it dignity and bearing. The "masher" of the Morehead river is distinguished by wearing a bird's claw stuck by a small plug into an incision on each side of his nose near its point. The claw points towards his eye. A string is attached to each claw, and is led through a hole in the lobe of the ear, and the two strings are tied over the occiput. There are small ornaments on the strings. This is one of

the most effective styles of decoration. All wear finger-rings of wallaby-skin or of turtle-shell. One of the most curious ornaments seen on the western dandies were certain portions of the human body that could only belong to the male sex, in a dried condition, worn as pendants from the neck. Further east, these are replaced by the homologous parts of wallabies, etc.

Perhaps there are very few things that throw more light on the

TWO PORT MORESBY WARRIORS.

social state of a people than the treatment of their widows. In Fiji and in the New Hebrides she was strangled; in India she was burned; in England she was, until not very long ago, compelled to marry a man selected for her; she could not without permission choose for herself—such would seem to be a fair inference from the seventh chapter of Magna Charta. The lot of the Papuan widow is not less hard than was that of the widow in the days of King John. She is the thrall of the

mother-in-law, or of her husband's brothers, or of a stepson. For a season she wears weeds and blacking, and is then disposed of in some profitable way by those possessing an interest in her. But she has to be careful to demonstrate wifely and becoming grief for her husband, by weeping and watching, and it may be by smearing her body with the exudations of his corpse. If she fails in these matters, she may, with fatal results, be suspected of having compassed his death. It is exceptional for her to be denied to re-enter the married state.

In New Guinea, as elsewhere, it seems that the treatment of widows has been regulated so as to give to wives a strong interest in keeping their husbands alive. This may have been an outcome of marriage by capture or purchase.

The rights of the individual, not of the community, form the basis of the Papuan law of custom. Cultivated land, fruit-trees, dogs, pigs, fowls, houses or parts of houses, and canoes are individual, not communal possessions, and pass from father and mother or uncle and aunt in direct or collateral succession according to the custom of the tribe. The tribal lands lie inside certain limits, and unused land is common property; but once cleared it belongs to the native that works it. They generally fish and hunt in parties, and they sometimes work a few together in clearing and fencing, and in breaking up rough reed land; but the garden plots are always individual property, and are cultivated as such. Friends and relations assist in building a new house, the owner feeding them; but any small combination is confined to the immediate family circle or to intimate friends, and has no communal basis.

A communal basis of administration would be quite contrary to the Papuan instinct. In all matters affecting property his tendency is clearly towards individualism. His eye to his own personal advantage is so keen that he cannot see anything else, and he could not be a partner in any going concern. It may be possible to convert his personal avarice into individual effort. If so, his future is assured.

## VI. Dress.

Dress differs very much in different districts, but local fashions are not often changed. The simplest is where the men and boys wear nothing whatever. This, as regards the males, is not uncommon anywhere away from the coast. The young women on the Mambare river are the only girls that do not wear anything. Next to nothing, in male attire, comes the yard or two of twine worn by men in the central district. This dress and the first sacrament of the Old Testament would have been incompatible. Corresponding to the string dress of these men

is the single strip of split cane or narrow ribbon of bark worn by the women of the Mekeo range and neighbouring country. In the districts next to those that wear the string, the dress becomes a long strip of leaf. In the very great majority of instances women wear a graceful and handsome petticoat of fibre or of split leaves, sometimes interrupted in the sides, or tucked between the legs, but often complete and reaching to the knee or calf. Among all tribes the modesty of the women as regards dress is very remarkable. The smallest little girl, except on the Mambare and Kumusi, is not allowed to go uncovered. On the other hand, it is exceptional for women to wear anything on the breast except when in mourning. The leaf strip of the men becomes in other districts an apron of leaves or a large net bag, or both. In others there are used a front and back apron of small branches or leaves, suspended from girdles of mat-work, cane, shells, carved bark, great pads of hair, or many turns of rope. Sometimes the front apron is made of loose straight fibre, with a plaited, strongly made headpiece of the same material. These can be seen at Toaripi, exactly of the size, shape, and fashion of a sporan, of which it is most probably the immediate predecessor. On the north-east coast the petticoat is always made of native cloth, the beaten-out bark of the paper mulberry, or of the wild bread-fruit, or of a kind of nettle. A strip of the same material, coloured by clays, mangrove mud, or by the fruit and leaves of the banyan and other trees, is used by males instead of the string or pandanus leaf. At Bailala in the Gulf of Papua, and at some places on the north-east coast, sashes of native cloth, with a foot or two at each end painted similarly on each coast, are used by the young and gay men as T-bandages. On Mount Knutsford the men wear an oblong piece of net of the form and size, and fastened in the same way on the breast, as the ephod of the Hebrew high priests.

Caps for both sexes are also made from native cloth. This product is best made, and most tastefully printed, on the rivers of the north-east coast, from which interesting cloth patterns are obtainable. High up the Fly river they put on, during a shower, capotes of native cloth or of netted work, that cover the head gracefully, and the body down to the waist. In ordinary attire, the women of the upper Fly wear a grass or fibre petticoat, and the men the shell of a land-snail, or about three-fourths of the shell of a nut about the size of a large walnut. On the upper Bamu the men wear a fringed girdle, which at a little distance is always taken for a petticoat. At Aroma one of the same fashion, but made of Job's tears and worn with the body painted black, is used in mourning.

When in mourning, the women of the north-east coast wear jackets

of Job's tears, or network. At Mobiabi the widow often wears a beautifully knitted and gracefully made jacket of finely plaited bands, that look like strips of silk lace. This latter is the highest development of native dress in the country. On Kiriwina the widow wears the adorned lower jaw of her husband, is blackened all over, and is cased in six or eight straps that go round the trunk like hoops on a cask. On Duau she wears a great bunch of fibre and twine from the neck on the breast. From the simple string upwards there is endless variety in the fashion and cut of the same category of dress in different localities, and the criticisms of the followers of one fashion sharply burlesque and quiz others. The man that wears nothing is considered to be indecent by the polite man that is clothed in a yard of thin twine—this may be an outcome of the curious contradictory modesty of the race—the latter is laughed at by the gentleman that wears a strip of leaf; and all are ridiculed by him that wears a band of native cloth. Objects of intense interest and curiosity to each other were the man in a yard of twine and the man in a snail-shell, when they met and gazed in silent wonder at each other on the upper Fly.

Of course, coloured clay, lime, and charcoal may be added freely to all other garbs. So are ornaments made of nearly all kinds of teeth procurable, from man and the crocodile downwards; from seeds, shells, feathers, skins, bones, turtle-shell, coconuts, bamboo and other woods; and from certain parts of man and animals; but nothing is made from the teeth of the whale, shark, or dugong. The most highly prized necklace is of dog's or crocodile's teeth. Pearls, precious stones, and metals were all unknown. In the islands bedclothes consist of mats made of pandanus leaves, sewn by fibre and a needle made of the bones of bats' wings. On the north-east coast they make neatly plaited sleeping-mats of coconut leaves, to place between the body and the floor or ground. They make a small sheet of native cloth anywhere on the mainland to serve as a covering at night or in bad weather. In Mekeo the whole family may get into a huge bag for protection from mosquitoes. Its weight is kept off their bodies by its being suspended to the roof of the house by a cord attached to the middle of the bag. In some places each person sleeps in a hammock.

Strips of cuscus skin are greatly worn as head ornaments, but no clothes are made of skin.

In some districts elaborate mask dresses are worn by those that go round to intimate that a taboo has been imposed. These are constructed so as to completely cover the individual and conceal his identity. Masks are also used for certain dances, etc. Tattooing is common in the central district, and at Eroro, on the north-east coast, but it is not

practised by the black people of the west. It is not used in the Louisiades, nor at Kiriwina, nor on the D'Entrecasteaux Islands as a rule, but is common on some of the small islands.

Over a large part of the Possession hair on the face is considered superfluous and intolerable, and it has therefore to be removed. There are many mechanical devices for effecting this. Some tribes simply press the hair between the thumb-nail and a piece of pumice-stone; others cut it off close with a sharp flake of obsidian, shell, or bottle. But the most effective is the depilating instrument of the Mekeo district, which only requires to be better known to be brought more into use

SCENE AT NORMANBY, NEAR CAPE PIERSON.

elsewhere. It consists of 6 inches of twine, to one end of which is attached two long fibres from a mangrove shoot, or from the husk of a coconut. The two fibres are held in the left hand, and laid flat on the surface to be depilated; they are at such distance apart as to receive a certain number of hairs between them. The twine is then rotated between the first finger and thumb of the right hand; the hairs are thus twisted round the two fibres, and are then lifted out, leaving a perfectly smooth surface, free of the stumps and fragments left by the crude and unscientific process of shaving. Of course the hair grows again, but only to be lifted out when it appears conspicuously above

the surface. No doubt it would be possible on the same principle to construct a machine that could depilate a man's face like a lawn-mower, and which would dispense with the steel razor for shaving. In a great many tribes the eyelashes are the only hair left on the face; in a few the eyebrows are not pulled out, and where left they are very thick and broad. Among the natives accustomed to remove the hair from the face, the presence of a beard has different significations; for example, that a man is no longer a Don Juan, or that he has taken a vow not to shave until he shall have killed some particular person, etc. In some tribes the old men cunningly tell the rising generation that if the latter eat fish it will make their beards grow. Of course the same objection does not apply to the greybeards themselves.

The wig is not worn by Papuans; but false whiskers have been seen among the tribes near Gumboro on the north-east, but the significance of this is not known. They never file or remove the teeth.

## VII. Music.

The drum is the most widely diffused and the most used musical instrument of the Papuan. It is found all over the Possession, in the form of a wooden cylinder, made by hollowing out and polishing from 6 inches to 3 or 4 feet of the trunk of a small tree. A tree that was already hollow was generally selected, and was worked down by fire, shells, and stones; but where they are now made by iron instruments they are less particular in selecting the tree. It has one end covered over completely with a single piece of large lizard-skin. The other end is always open. There is infinite variety in the details of manufacture of this instrument. It is always tapped by the fingers. A drum without a membrane, like those used in the Pacific, is unknown to them; but the Tugeri people, when surprised by our arrival, assembled their scattered warriors and hunters by heavy blows with sticks on the sides of their canoes; and other natives, as at Biroe, on the upper Purari, have similarly struck great hollow trees in the bush to inspire us with terror.

The drum is almost always accompanied by the voice. At one great ball which was given in a large house on the Fly river, several dances were performed to the sonorous throbs of an orchestra of three-score great drums, accompanied by a monotonous shout. It may be doubted that the Papuan ever seriously dances without the rhythmic tap of his drum.

The flute is used for private amusement and solace, but not for the choral dance. It is made of a piece of small bamboo, generally with three stop-holes. In some places it is blown by the mouth at an open

end ; but on the north-east coast it is winded by putting a nostril on a small hole similar to the stops, and in line with them, but near the closed end of the instrument.

Pan's pipes, made of small bamboos up to 6 or 8 inches in length, are used everywhere, but more as a toy than anything else. They have no idea of making or using the pipes an inch or more thick, and 4 or 5 feet long, that are performed on with such wonderful effect by some of their neighbours in the Pacific.

The conch-shell is used wherever it can be found, but rather for its sound than for musical purposes. It is forbidden to blow it, and even to touch it in most places, save on proper and legitimate occasions. It is very often employed to indicate the approach of an enemy or suspicious visitor. In Milne bay the pig that is being tied up for drowning, preparatory to being eaten, is surrounded by a circle of shell-blowers, whose music and shouts of "Oo" prevents its squeals from offending the ears of the assembled guests.

On the Fly estuary—at least at some places—the accumulated peccadilloes of childhood were annually paid off by a general birching of the children as the sun rose from the sea on the eastern horizon on the morning that put an end to the greatest ball of the season. That the hearts of affectionate parents might suffer as little as possible during this state function, the juvenile recipients were encircled by an orchestra of conch-men, to drown the natural and artless expression of the youthful feelings.

The rattle, as an accompaniment in dancing, is of common use in some of the eastern islands, and inland. It is sometimes made of shells in the islands, but is generally composed of a large number of dry hard beans, fastened to a basket-like frame, or to loose, connected strings, so that when shaken by the hand, or by jumping, they knock against each other and produce a jingling, whizzing sound in cadence with the movements of the dancers and the rhythm of the drum. In this connection may be mentioned the double carved shield used in dancing at Kiriwina, which is flourished so as to produce the sort of effect that is caused by the war-fan of a Fijian mountaineer.

They do not seem to use any stringed instrument. In the extreme west, many of the men wear suspended round the neck a small undeveloped coconut, about an inch or an inch and a half in diameter in the middle, with the end open, and fashioned so that it forms a sort of half flute, half whistle, sometimes provided with stops. With this they so exactly imitate the call of a bird common to that part of the coast that it was not possible to say whether the sound proceeded from the bird or from a Tugeri man. It does not seem to be used anywhere east of the gulf, and is not very common there.

The jew's-harp seems to be used everywhere. It is of the usual straight type, 6 or 8 inches long, made of bamboo or of bone, and carried in a cover made of bamboo cylinder. It is played by jerking a small string attached to the tongue of the instrument.

No sound is more sweet to the ear of the Papuan than the rattling, rhythmic, grating noise the leading men of certain districts produce by rasping the lime spoon on the mouth of the lime gourd. This is carried to greatest perfection in the Mekeo district, where the lime spoon is generally made of cassowary bone, fluted by horizontal rings cut deep into the length of the spoon-handle. On the end of the gourd a circular mouthpiece of strong shell is neatly fastened by gum, and on this the lime spoon, jerked rapidly up and down three or four times, lets all that are near know that the owner is helping himself to lime. Where the lime spoon is made only of wood, as in the islands, on which the cassowary does not exist, and there are only few wallaby to furnish bone, the handle is split longitudinally, and the owner snaps the two parts together on his thigh when he is about to use the lime spoon.

The chants and dances are perhaps less varied than they are in Polynesia, but they are not less highly valued. They are, at least in many cases, real compositions, the work of tribal composers past or present. In some places they are jealously guarded as personal or tribal property, which others may not use without permission from the owners.

If the dance takes place in the open air, the musicians usually occupy the centre, if there is a special orchestra apart from the dancers. But the dancers often supply their own music; or, if in a house, the orchestra will occupy one side. Dancing is much more indulged in by the men than by the other sex. Sometimes they dance together, but very often the women dance by themselves as at Kiwai, and one can be present at the latter only by special invitation.

## VIII. Canoes.

There is very great diversity in the form and build of the canoes used in the Possession. The Tugeri invaders use long, rough, and unornamented, broad-ended vessels, each made out of a single tree. They are usually from 2½ to 3 feet broad, and strongly made, without any outrigger or sail. They are pushed along by poles of the sago midrib and by saplings. On the coast nearest to the islands of Torres Straits, canoes often have a double outrigger, a small one being placed at some distance from the canoe on each side, like the Java boats. These canoes are sharp-pointed, made of one piece, and ornamented with cassowary feathers. At present the coast people between the

Fly and Mabudanan have their canoes schooner-rigged, with duck or canvas sails, and these they find very fast and convenient. This is, of course, of quite recent date. On the lower Fly, the canoes are small, each with a single long slender outrigger at a great distance from the canoe. They are remarkably unhandy and inefficient. With small rods and twine they rig up little oblong sails in the estuary, for going before the wind. In the Fly, and in the gulf generally as far as the Purari, the paddle is used in the larger canoes with much skill,

SCENE AT DOBU.

the crews, sometimes amounting to over a score of men, rowing like one man, all as a rule standing while paddling.

On the upper Fly, the canoes are only 12 or 15 inches broad and from 20 to 30 feet in length, with a long projecting prow, which is flat above for 4 or 5 feet and then ends in a sharp point. In these extremely narrow vessels, which are all single, and without any outrigger, the half-dozen or more rowers all stand erect and ply the paddle. It seems marvellous how they can maintain the whole in equilibrium. This is perhaps done by means of the paddle, which is of very peculiar form, the handle some 10 or 12 feet long, and the blade about 18 by 10 inches. Near the frontier, in the very heart of the island, they use, on the Fly and Palmer, paddles made of a plate of bark let into the end of about 4 feet of sapling, like the oars used at Aden and elsewhere.

Between the Fly and the east end of the Gulf of Papua the sail seems to be quite unknown. In the Fly it has not reached beyond the stage of earliest development. The central gulf canoe, a handsome, strong, and well-finished vessel, is made of one piece, is used singly, and without any outrigger. The special peculiarity of its construction is that it seems designed more to let the water out than to prevent it from entering. It has neither prow nor stern, but is cut away from above at each end in a gentle curve, so that the extremity, if it meets the water, divides it in the horizontal instead of the usual perpendicular direction. The extreme ends are about level with the water, or very nearly so. Sometimes one end is cut nearly straight across; but, if so, the end is left open. The water is kept out by a man or boy sitting on the end, or by a bank of mud built across the hull. These canoes are often ornamented by low relief or intaglio carving, inside and out, and are painted with clay. They are propelled by paddlers, who always stand erect, sometimes ten or twenty in number, but at a few miles' distance they appear greatly more numerous. They are confined to coast and deltaic tribes.

At Biroe, on the upper Purari, the canoes are of the more ordinary type, with sharp and high-ended prows, cutting the water perpendicularly, but single, and without any outrigger. In the Mekeo district they are provided with a flat projecting stern end, the full breadth of the tree, and the other end is also blunt and clumsy. They are all of one piece, and are pushed along by poles.

In the central district the ordinary canoe is sharp and high-pointed at each end, but made of one tree. It is generally used single with an outrigger, and is moved by pole, paddle, or sail. The vessels used for carrying sago from the gulf to the central district are large tree-trunks dug out, with no regard to form or elegance, but designed so as to furnish the greatest possible amount of hold. A number of these are fastened together, and provided with rudely made mat sails, great flat boards for steering, and heavy stones on the end of long and strong canes to serve as anchor and cable. They are made of soft wood, and are required and used only for the sago trade. A single lakatoi can carry from 20 to 30 tons of sago.

The great majority of the ordinary working canoes for the central district are made at Keapara, nearly 60 miles east of Port Moresby. They are made of a soft tree, which they find chiefly on the Vanigera river. The whole village is practically composed of professional canoe-builders, of which craft, from half a dozen to half a score, are always in course of construction. They fashion the outside with the steel tomahawk, but they dig out the inside with a stone adze, which, for this part of the work, they always prefer to an American axe or to a

steel adze. They work in pairs, each man facing his mate, and delivering with him alternate strokes at the same spot.

From Aroma to Orangerie bay the sailing canoe is double, made of hard wood, but with the sides often increased in height by boards sewn on to the hard-wood hull. They are rounded at each end, and look clumsy. A tree serves as mast, the roots of which must spread out horizontally, presenting the means of tying it to the platform deck. The stays are of cane. The sail is shaped nearly like a convolvulus leaf, but the upper end is cut out so that it is almost perfectly crescent-shaped. Spliced saplings run along the edge of the sail, from its lower point to the extreme ends of the crescent, and keep it in form and shape when suspended by its upper edge to the mast top. Between Yule Island and the Fly a native sailing canoe is not seen. But there are almost always several crescent sails, perhaps the most delicately graceful in the world, visible from any spot between Yule Island and Orangerie bay.

From Orangerie bay to Tagula, Sudest, and Murua, much more handy and skilfully made canoes are in use. In vertical section they are wedge-shaped, sometimes presenting a width of 4 or 5 feet in the middle. They are sharp-pointed at each end, at least below, and are formed of boards built upon a strong curved hard-wood keel. They are sewn and caulked, ornamented by sculptures of fish in low-relief, and covered by coral lime. They are all provided with a large outrigger of light-wood. The sail is elliptical in form, the whole circumference being kept in shape by a light frame of saplings. It is neater and far more business-like than the crescent-ended sail of the south coast, but wants its graceful and picturesque outline. One of these canoes can carry several tons of yams, and is perhaps three or four times as heavy as a whale-boat. Four or six natives can, however, take one up a very steep bank or beach. Each man provides himself with a lever as large as he can use conveniently, made of a strong sapling 3 or 4 inches in diameter, and a block of round timber to serve as a fulcrum. Two or three station themselves at each side, place their fulcrums and levers in position, and at a given word all press down their levers simultaneously, and when the canoe is clear off the beach, give it a forward jerk which advances it nearly half a foot. This procedure seems to be one of great interest, as probably furnishing an easy explanation of the manner in which many heavy things may have been transported or lifted by barbarian people. In Tauwara or Milne bay the working canoe is made of a single very long tree with a rounded under surface, and without sail or outrigger. It is very difficult to manage, and is very dangerous in any seaway.

The war-canoe of the east end was used from South Cape to Tauputa,

and from Fergusson Island to Ware. It is a very long and narrow canoe, with an outrigger of the same length as the canoe, and only about 2 feet distant from it. The canoe has seats for about twenty paddles, and was decorated by a few skulls. It is quite possible that this type of the Papuan fighting craft may never be used there again as a vessel of war. In six years it has become as obsolete as a trireme. In Kiriwina there are no sailing canoes, but there are a few at Simsim and Kawa, north-west from Kiriwina. No native sail has been seen at sea or on shore, on the coast north of Ipote. Thus the sail was unknown over a large area of coast-line on the mainland of the Possession, both on the east and on the west.

Well-made canoes, all manufactured by the stone adze, sharp and high-ended, made of one tree, were seen in great numbers on all the rivers of the north-east coast. They are always provided with one long, thin outrigger, at an unusual distance from the hull. They use a lance-shaped blade on the short paddles of the east end, those of the Bennet Islands being remarkably well made, with some neatly executed carved work on them.

In everyday life the cataraman is much employed for fishing and such purposes, on the lower part of the north-east coast. It is made of three squared logs, each of which is tapered to a point at the ends, which are sometimes cut into the form of the head of a pig, fish, or crocodile. Rafts of bamboo are very frequently used on the rivers, where that plant grows plentifully.

On the island of Pannaieti a great many sailing canoes are built for other tribes. They are made of a hard-wood keel and of boards, and are never dug out as at Keapara. The builders, accordingly, do not use the stone adze, but do all their work with steel. But the custom of paying for the canoes in stone adzes is still kept up there, as many as thirty or forty being given for one canoe. Those articles are not now used anywhere in the district, save only as a kind of currency. This will, no doubt, speedily die out. Some canoes have already been paid for in tomahawks. It is curious that they are accustomed to grant long and easy terms in paying for these canoes. Next to Pannaieti comes Murua as a canoe-building place for the east, but they do not turn out so many as does the other island.

The canoe of Rossel Island is different from all others, and is undoubtedly the most skilfully made of any in the Possession. They are not made for sailing, and are not of large size, some 20 to 30 feet long, and from 1 to 2 feet broad in the middle part, which occupies about a third of the whole length. A third or a fourth part of the hull at each end gradually narrows towards the extremity. It is straight above, and

reduced to a flat surface before the process of digging out is begun. The central part is oblong in shape, and is closed in, sides and ends, by boards a foot or more in height, sewn and well caulked with lime and different kinds of gum. The end parts are dug out through a slit, about 2 or 3 inches broad on the upper side. When the hull is hollowed out to the end, a board is carefully fitted along the whole length of the slit, and is caulked watertight. It thus becomes a Rob Roy canoe, which cannot be sunk or filled so long as water does not get over the top of the central citadel. They are provided with an outrigger, and are pushed or paddled according to the depth of the water.

Some of the natives of the east end, as at Nada, certainly use the stars to sail by at night. In the central district there is also some practical acquaintance with astronomy.

## IX. Arms and War.

It may be of interest to take a brief glance at the subject of arms and war.

From the Dutch boundary to the Angabunga the national weapon is the bow and arrow. It is used by all the inland tribes on the Morehead, Fly, and Purari. The bow of the coast tribes is made of a single slice of bamboo from 5 to 7 feet long, and from $2\frac{1}{2}$ to 3 inches broad in the middle, tapering to points as thick as a man's finger. The inside of the slice of bamboo is turned outwards. The string is a single strip of scraped bamboo or cane, a quarter to half an inch broad. It has an open knot formed on itself at each end, which slips over the end of the bow when the latter is strung for use. Inland tribes, who sometimes have not got bamboos, use palm-wood bows, with fibre strings, or with strings of fibre at the ends, and cane in the middle. The arrow has always an unfeathered shaft of reed half an inch thick, or is made of a thin sapling; it has a hard palm-wood end a foot or more in length, which is armed for fighting purposes with a detachable point of bone, or the claw of a crab, or of a cassowary.

These arrow-points are of great variety, and often of elaborate workmanship. The fighting arrows are often very old and worm-eaten. The artistic tendency of the west finds outlet in carving and ornamenting them. Hence the best are never used except in cases of emergency. The points are not poisoned, but as they are made from bone or claws in which a certain amount of animal matter has been left, they contain septic germs; and as these points generally remain in the wound, in effect the arrows are poisonous. The heavy war-arrow, which they frequently shoot clean through a man, is sometimes over 6 feet in length. Recently there was a prisoner in Port Moresby gaol in whom the tragedy of

Mordred and Arthur was reversed, for in this case the son sent an arrow right through the body of his father. They shoot the fighting arrow from 150 to 200 yards, but the light arrows they can send as far as about 220 or 250 yards, thus greatly exceeding the distance given by a recent writer in the *Deutsche Rundschau* to the African bowmen. Quivers are not used, the arrows being carried in bundles held together by a string; but in action the bowman holds two or three in his left hand or in his mouth. There is great variety in the make of the gauntlet, which is used everywhere. In the far west shields are not used, but they try to parry arrows with a short stick. In the gulf many use oblong shields with an opening on the upper end for the arm, with fantastic armorial ensigns carved on its front, and duly coloured with lime and clay. By the absence of the ornate mottoes that would have expressed the virtues and ambition of the Papuan warrior, had he been a lettered man, heraldry and poetry are so much the poorer; for if Saul slew his thousands and David his tens of thousands, the Papuan imagination does not leave its fighting heroes lagging behind them. They have not invented any protective armour for ordinary use.

In the Fly country and the west end of the gulf, the bowman carries a bamboo knife, slung between his shoulders by a string round his neck. It is passed down from father to son, and is a regular heirloom, which indicates the prowess of the family by the notches on it. When he shoots down a man, the western warrior tears a thin slip off the bamboo, which then, covered as it is naturally by a fine silicious varnish, presents a keen edge, by which the fallen foe is decapitated. The head is then carried off on the hereditary loop, which has a toggle, which is put through the floor of the mouth, to support it in transit.

In the middle of the gulf, the place of the beheading-knife is taken by a formidable dagger made of the leg-bone of the cassowary, with which the vanquished is despatched by thrusting its long bevelled sharp point into the chest from above the collar-bone.

The stone club is also used in the bow-and-arrow country, but it is not common among some of the coast tribes, where stone is rare. The arrow and spear districts meet in Mekeo, east of which the former is not regularly used in British New Guinea. It may be seen at Port Moresby, but probably only in specimens brought from the west. The spear is of different shape and size in different localities, usually of manufactured wood, but occasionally it has its original form, a pointed sapling. It may be plain or have carved barbs on it, generally only on one side. It is always associated with a shield, except, perhaps, in the Louisiade and D'Entrecasteaux islands. Its use is universal in the eastern half of our mainland. The shield sometimes, as in Orangerie bay, covers

the whole body, sometimes is not more than 18 inches long, and half as broad. In Nada it is made of light corky wood, and is elaborately painted in red and black or brown on a white ground, and every line and corner is named and known to the initiated. The man-catcher of Keapara is theoretically a pretty weapon. It is a light, long-handled cane hoop, which is to be passed over the adversary's head, after the manner of the Roman retiarius; but the hoop is provided with a spike on its near segment, which is meant to pith the captured one in the way a criminal is legally and officially done to death in some parts of Europe.

No instance of this weapon having been used in practice is known

SCENE AT DOBU.

to me. It is an interesting object for the collector; but, as its spike is covered by the hoop on the outside, it would require a certain amount of compliance on the part of a man armed with a spear or a stone club to put his head into it. The man-catcher is perhaps never used in the field. As a weapon it would probably be inferior to a walking-stick. The Balearic Islands of the Possession are those of the D'Entrecasteaux group, chiefly Goodenough Island; in the latter the sling is the chief and favourite weapon. It is made of plaited fibre. The slingers throw smooth pebbles in precisely the same manner as was done by king David and the funditores of the Roman armies. The stone club is found practically everywhere on the mainland. Its use is universal on the

north-east coast and at all parts of the interior that have been visited. Its place is supplied on the low coral islands of Nada by clubs of ebony wood, and in the Louisiades by palm-wood clubs. It is certainly remarkable that on Murua the stone club was not used or made, although the best stone for axes and adzes is found and worked there. Clearly the stone club has never been used in our islands at any time. The ebony spears of Nada and Murua are very handsome unbarbed weapons, which, like the stone club on the mainland, are happily fast disappearing from the country. No spear-throwing instrument has been met with, no boomerang, or club, or prepared stone for throwing at an enemy.

Formerly every man carried arms. Women going to fetch water or food were escorted by armed men, and it was customary to place sentries in the village at night. No race of men can constantly carry arms without occasionally using them. Their universal presence make bloodshed of daily, hourly occurrence. Fortunately, the custom of carrying arms is disappearing with wonderful rapidity.

The means of passive defence are various. First there is the very obvious one of running away. This is very frequently practised. Then comes the natural one of getting up a tree. This has been carried to great perfection. There are perches on some tall trees that are only used as watch-towers. These are often provided with a rope and basket for drawing up food and water for the sentry. In others, elaborate and well-built houses are constructed, sometimes three or four in one huge tree. There the whole family, or the last remnant of a tribe, tries to protract the expiring term of existence. In other trees there are simply fighting platforms, well provided with stores of spears and stones. These are ascended by ladders of cane or bamboo, when the village is attacked. In the arrow country there would be less safety on a tree, and consequently tree-shelter houses are not used there. On the Bebea river and on the Fly, however, there are trees with ladder and platform that serve simply as a look-out.

In some cases the chief defence consists in the whole village being perched on the summit of a ridge or peak so steep and narrow that one must go through the walls of the houses to get from one to another, as happened to a police party recently, when dealing with the Ebe tribe in the central district. In other cases, as at Ipote, they build shelter-houses on the top of high inaccessible overhanging rocks. They ascend these by means of ladders, which they then draw up after them. The use of the palisade is very common in the Cloudy bay district. It surrounds the village, and includes, as a rule, one or more tree-houses, and is so tall and strong as to be practically spear-proof. In some villages the palisade and the tree-fighting platform are arranged with much skill.

A tree is selected outside the palisade and near to the entrance. The platform is erected on it so high that a spear cannot be thrown to it from below, while the defenders go up and down to it by a ladder that leaves the ground from the inner side of the palisade, and slopes over the top of the latter to the platform on the tree. There are often two or three platforms, one above another, on the same tree. It is not used in the gulf or west of the Fly, but is partially used in the river villages on the north-east coast. The fosse does not seem to be known to them, but its place is more than supplied in the case of a few villages in the central district, built on piles in the sea. Weaker tribes in the west

TUBETUBE (SLAVE ISLAND).

build their villages so that they cannot be reached without a long wade through a swamp. A hunting-lodge on the upper Fly river was so constructed as to be proof from arrows outside, and as to provide screens and shelter inside from assailants storming the place. At Biroe, on the Purari, 130 miles from the sea, the walls of the lower story of the houses were nearly 3 feet thick, of rough logs, with an equally strong flat roof, so as to be completely arrow-proof. The third story was lined with sago-leaf, so as to be arrow-proof, and was loopholed.

That the special purpose of the sea-built houses was for protection, seems to be shown by the fact that these villagers are shifting ashore now that safety is secured them. When I first visited Kaile, the people

were afraid to land for food and water. They are now nearly all living ashore. In the gulf and west country, the great houses sometimes, as at Idagositia, over 500 feet long, and accommodating hundreds of people, in all probability arose in the desire to be able to present a concentrated force to meet an invader. In time of hostilities, they plant, especially in the Louisiade Islands, sharpened stakes of bamboo and palm-wood in the grass and on the paths. These are dangerous to any one approaching in the dark, and to the unwary in daylight. Sometimes they dig deep and narrow pits in the villages between the houses. Children, and generally women also, are, if possible, sent away if the village has no tree-houses or palisade, before fighting begins. But of course this cannot always be done. On the upper Kumusi river, however, each warrior appeared with a stone club, a shield, and one or two spears in his hands, but followed by a woman carrying some reserve spears. The woman did not appear to be present as an actual combatant, but was probably only an armour-bearer. On small canoes, however, met with on the Mambare, containing only two or three women, there were at least as many stone clubs as women.

In fighting, with Europeans at least, they come forward in such loose order that they cannot support each other, so as to rush a camp or position, as Fijians or Tongans would do. This is probably due to the want of any real authority on the part of the leader. A few men are always much bolder than the mass, and some of them in fight have bravely advanced in front of their followers and challenged a European to "come on."

The Papuan brave is by no means without inducement *αἴεν ἀριστευεῖν καὶ ὑπειρόχον ἐμμεναι ἄλλων*. To kill a human being under any circumstances hallows and dignifies the homicide in a high degree; but of course the slayer of a warrior is held in greatest honour. Decorations of different kinds, and social privileges, are conferred on the homicide. These decorations were as eagerly sought after by Papuans as are the knightly marks of merit in Europe. The Victoria cross of the Papuan consisted of the upper mandible of the hornbill—worn on the forehead—which was conferred on the slayer of a warrior in single combat. These distinctions are not always well earned from our point of view. For example, there was, some three or four years ago, a series of murders in the Kabadi district, one of the oldest fields of the devoted labours of the London Missionary Society; and I was solemnly assured by natives that in a short time eight or ten murders had been committed in order that certain people should be able to wear the distinction of a plume of cock's tail feathers on the top of the head. It is very improbable that another murder will be committed there

for that purpose, or that a homicide will wish his deed to become known. The recent great slaughter of a coast tribe in Cloudy bay by an inland confederation of unknown tribes originated from the desire of a leading man to distinguish himself by killing some one. He was himself sentenced the other day to undergo capital punishment.

A change in the public feeling that honours this homicidal display of often cheap manliness could perhaps, in the course of time, be effected by the teaching of our morality; the practice is cut short by the magistrate and the constable, a process which is greatly facilitated by the fact that by nature the Papuan is not a ferocious fighting man. His disposition is not warlike. I have not known them to actually fight afloat. On the Fly river, the canoes bearing down on us would most probably have landed their warriors; on the Kikori river, they had already sent a number of men into the bush behind us before a bow was raised. At Wabuda their canoes full of armed warriors offered no resistance. In a brief space, when fire was opened on them, on the Kikori river, all jumped overboard on the off side of the canoe, and, keeping well under water, managed to speedily land all their canoes. They feel instinctively that their most advantageous position is their native thickets. There is no reason to suppose that they have the senses of seeing or hearing more acute than a European. In fact, it is almost always the native that is taken by surprise.

They delight in painting themselves fantastically for the fight, and always appear, if there is a moment to spare, decked in shells and feathers. On the north-east coast, the warrior puts his face inside a frame that has a row of projecting boars' tusks round it. It is the Papuan idea of a Gorgon's head. There also, and on the south-east coast, they wear mouthpieces usually made of a plate of turtle-shell, and faced with red seeds and curved boars' tusks. Got up in all this terrible finery, the spear-fighting man yells at his foe, and hopes to shake his nerve through the senses both of sight and hearing, while at the same time it encourages himself. Until yelled at by a Papuan warrior in paint, feathers, and a mouthpiece, one cannot appreciate the "bardus" mentioned by Julius Cæsar, nor the *βοὴν ἀγαθος* of the 'Iliad.' Some twelve or fifteen canoes, when sweeping down upon us in the Fly river, on our first visit there, halted and performed a canoe dance, in which they trumpeted like the Goura pigeon, to encourage themselves and to frighten us. Shouting does not suit the bush tactics of the stealthy bowman, and he therefore keeps quiet until he lets fly his shaft, on which he yells like a spearman. This was how they behaved on the upper Fly, when they discharged their arrows on us. When they wish for peace, they in all places will wave a green branch,

stick leaves on the head, or carry them in the hand, as a symbol of friendliness. In the interior, the archer people break arrows, and throw the fragments to each side. They send arrows as a mark of peace and friendship near the coast. In some places they indicate peace by shooting arrows in the air.

## X. Food.

We shall now see briefly what the native eats.

There is no district in British New Guinea in which sago is not used. In some places the natives live on this almost exclusively. Many great tribes, between the Fly and Orokolo, do not appear to possess any gardens of any kind. For their numbers they have very few coconuts, some tribes practically none. Their daily bread is sago, tempered occasionally by a mouthful of fish, shell-fish, pork, cassowary, forest fruits, turtle-eggs, or any small thing that can be procured. It seems very strange that the sago-eating man, even when practically confined to this one article of diet as the staff of life, should be perhaps the most powerful in physique of all the tribes in the Possession. Confined as they are so very largely to a farinaceous diet, it would have been very easy, had they been puny and dwarfish, to account on physiological principles for defective development and debility. The explanation seems to lie in the fact that they have large hunting-grounds in their hinterland, where they periodically make encampments, and add to their sago the produce of stream and forest.

Sago is generally eaten by putting a ball or roll of it on burning coals, which forms a translucent layer of the consistence of glue on the outside, and leaves the centre dry, floury sago. The favourite method, which cannot be used very frequently, is to mix the sago with rasped coconut and roast it, enclosed neatly in a roll by pinning it into a single narrow palm-leaf. Sometimes it is boiled with green vegetables, and with the seeds of the bread-fruit; often it is boiled into puddings. There are tribes that have no sago, except what they buy. Some, as on the Mambare, have great quantities and hardly use it. It is made with fresh or brackish water. It is stowed away in dry masses, in baskets of palm-leaves, or in large bundles, or is packed into clay pots. When kept, it always undergoes more or less fermentation and becomes discoloured. Whenever it is possible to do so, natives plant vegetables of some kind to eat with the sago.

In Fiji I have never heard of sago being used as food by the natives, although there were considerable sago swamps, and the people were often short of food. On the other hand, it is a common article of diet in the Louisiades, the end of the Possession nearest to Fiji. It is, therefore,

an interesting question where its use stops between those two colonies. On this subject I append a note kindly drawn up for me by the learned Professor Giglioli, of Florence.*

The banana and sugar-cane are cultivated by all tribes that possess land dry enough to grow these things. Some of the tribes on the Fly, as at Tagota, seem to live almost exclusively on bananas, of which one community can enumerate three or four dozen quite distinct varieties. There is a wild bush banana, which is not edible. Some of the cultivated ones are of fine flavour, but they are not so productive as the "Gros Michel" of the West Indies, introduced recently into New Guinea through the kind offices of Mr. Thistleton Dyer, of Kew. In time of scarcity the young shoots of the banana plant are used as a spinage, another way of meeting the cravings of hunger which I have not seen used in the Pacific. Of taro there are many varieties, one of those grown in Tauwara bay being of remarkable size and excellence. It is not grown in irrigated grounds, but is planted in dry limestone ground, as at Kiriwina, or in deep, low-lying alluvial soil, as in Mekeo. Sugar-cane is greedily chewed whenever it can be reached. It is grown in isolated bunches in the gardens, among other vegetables. Some of the varieties—and they are very numerous—grow to a large size, but they often contain a boring insect. Certain kinds that are being tried in Queensland are said to promise a high percentage of sugar. The inner end of the small

* *Niu soria*, or *songo*, a genuine sago-palm (*Sagus vitiensis*, Wendl.), grows in swamps on Viti Levu, Vanua Levu, and Ovalau; it was first discovered by Mr. Pritchard and Dr. Seeman, in 1861. The natives were unacquainted with the nutritious qualities residing in the trunk, although at Viti Levu and Ovalau the pith-like substance of the Roro (*Cycas circinnalis*, L.) was extracted from the trunk for the use of chiefs.

Dr. George Bennett, late of Sydney, found a sago-palm on Rotuma, probably identical with the Fijian.

Dr. R. H. Codrington states that in the Banks islands the pith of the sago-palm is washed into starch in a trough of the stem, and cooked in cakes, but it hardly ranks as an article of common food. In the Santa Cruz islands it has an important place; and sago pith, cooked whole, was the main provision of canoes from Tikopia which visited the Banks islands during one year of Dr. Codrington's stay there.

Dr. H. B. Guppy informs us the sago is extensively used on the Solomon Islands. In Bougainville Straits the tree is known as *bia*, the sago as *nami*. The pith is washed out in the same way as in the Malay archipelago and New Guinea. The prepared sago is wrapped up in leaves in the form of cylindrical packages, 1½ to 2 feet in length; thus prepared, it often turns sour, which is no objection; when required for keeping, it is well baked in the form of cakes. Sago is a common article of food in Bougainville, Fauro, Treasury, and San Christoval (and, no doubt, other islands of the group); the Solomon islanders have not the forethought of laying by a store for future use.

Cf. Seeman, 'Viti, an Account of a Government Mission,' pp. 291–294 (London, 1862); Codrington, 'The Melanesians,' p. 319 (Oxford, 1891); Guppy, 'The Solomon Islands,' pp. 83, 87, 90 (London, 1887).

husk of some pandanus fruits is chewed on account of the saccharine matter it contains, but its kernel is seldom or never eaten. The yam and sweet potato are grown wherever the soil is sufficiently dry for them. In some places, as at Kiriwina, the yam is almost the only food for a large part of the year. On the island of Taviuni, in Fiji, the wild yam grew in such abundance and of such superior quality that certain planters largely fed their labourers on it. Strange enough, the wild yam as a food does not seem to exist in British New Guinea. The vine of the wild yam is seldom seen there, and the bush yam forms no part of the Papuan diet. This may be owing to the numbers, sagacity, and industry of the Papuan pig.

It is very worthy of remark that none of our tribes have discovered the process of ensilage so common in Fiji. By this means the Fijian can preserve his surplus store of vegetable food over two or three seasons, but of this the Papuan seems to know nothing. He sometimes, but very rarely, dries and smokes taro, on a small platform built over a fire, just as he dries and smokes fish and pork; he covers yams and potatoes for a few weeks with earth to keep them fresh, but this is done only as a farmer stores his potatoes in surface pits. It is true that sago, dried in baskets or packed into clay pots, can be kept for some time to meet an emergency; but there are large districts in the Possession where sago is a great luxury, as at Kiriwina, which is at the end nearest to Fiji. Still those tribes do not seem to know anything about the silo, although between crops they are often badly off for food. It would be of much interest to ascertain the precise distribution of that process in the Pacific. Several kinds of malvaceous plants are regularly cultivated as spinage, also some other undetermined plants. Recent additions to the Papuan diet are maize, rice, the cucumber, pumpkin, pineapple, and the papaya, which is fast extending over the whole country. They ate up the whole of the first crop of rice in Mekeo, and left nothing for seed. Roast cucumber and roast sweet potatoes are eaten all day in the villages of the Mekeo range. The unopened flowers of reeds are largely eaten wherever found. The extremely inferior bread-fruit is hardly edible save for the seeds, each as large as a marble. Of animal food the Papuan has considerable variety in fish and turtle, both from salt and fresh water; dugong, pig, birds of all kinds, from the cassowary to the tiny rail, eggs of birds and of turtles and crocodiles. The dog is a delicacy. Dog, dead and alive, has been presented to the administrator as a peace-offering alike in the Mekeo district and on the north-east. On the Fly river, a small pig was presented as a peace-offering by a man falling on his face. Some of the large snakes are eaten, but the small and poisonous ones are not utilized. The eating of any snake seems to be becoming a

reproach. One of the warmest quarrels amongst the members of the constabulary arose from the assertion of another native that the Fly river men ate snakes. The statement was certainly true four years ago, but the Fly river constables thought themselves insulted by it. In some tribes boys are made to eat the heads of snakes to make them wise and courageous. The crocodile is eaten in some districts, as on the Fly, but it is not eaten everywhere.

The wallaby is obtained in considerable numbers in many districts. The natives show much ingenuity in fishing and hunting. They use

A GROUP OF CURIOS.

hooks made of thorns, shell, wood, and bone. At Kiriwina they employ a hook about 2 feet long and some 6 or 10 inches across, made of wood, nearly as thick as a man's wrist, and baited with an octopus, for catching a kind of shark. In the d'Entrecasteaux group they fish with a kite, which is flown at a great height, supporting a string which draws a ball of fine fibre along the water. This is seized by a fish, which is unable to disentangle its teeth or to shake out the hook it conceals, and thus falls a victim to greed or curiosity. Other kinds are caught by small thorn hooks, which are attached to bits of cork wood that they cannot drag under. Some use small nets that are made into traps, weighted with a heavy ball of stone, and sunk baited to the

bottom, the bait attached to wooden springs, which shut and imprison the fish in the net bag. Nets of all shapes and sizes are used for catching fish in the sea and rivers. There are special nets for dugong and turtle. Fish are shot with the bow and arrow, and are also speared. They are caught by weirs, dams, and weels of many shapes and sizes, some of the latter for eels are 10 feet in length. Fish are also stupefied by several different plants, and are caught while thus intoxicated. In other instances the poor fish is caught by taking advantage of its unexpected high sensitiveness. A single native may sometimes be seen driving fish into nets 100 or 200 yards long by beating a heavy stick on the side of a canoe in the water behind them. It is not clear whether the fish is supposed to hear the sound or to feel the vibration of the blow communicated by the water—a question of some interest to the philosopher. Turtle are caught in nets, and not harpooned. The dugong is harpooned or netted. Some tribes, like those of Simsim, catch their fish principally by diving and securing them in coral cavities. All the coast people swim well, with the overhand stroke, and many are good divers; but the Papuan is not so much addicted to bathing as is the Polynesian, perhaps on account of the numbers and ferocity of the crocodile. The Rossel islander, however, though not much given to bathing, carries a sponge with which to wash his face, being in this respect as unique as the Mount Maybole native that uses a mirror of mica.

The wild pig is often a dangerous animal. It was probably this consideration that gave the man that killed the first pig in a hunt certain rights to his friend's wife in some tribes. In the arrow country he is shot with an arrow bearing a dagger-shaped point of bamboo, which, from the curved shape of the blade, greatly hastens the loss of blood from the animal. At the foot of the Mekeo range the pig is caught in a most elaborate trap, in passing through which he touches a delicately balanced trigger, which lets fall on him from above a crushing platform or weight from which escape is impossible. Pitfalls are also used for the pig. The pig is hunted with dogs, received on a small net not much larger than the man-catcher, and is then speared. If caught alive, pigs are kept in fences till needed for a feast. The wallaby is hunted by dogs, driven into nets, and speared. This is always done at night in some districts. Birds are caught in extended nets by the mountaineers. The reed and the blunt arrow have not been seen. The young of the mound-building birds are secured by putting a small fence round the mound, over which the young bird cannot jump. Ground-feeding birds are sometimes caught, as in Rossel Island, by a small cage-like house in which some food is put, with a movable door and a long string, by which a concealed native can shut the door when

a bird enters. The Papuan has no skill in tracking either game or man, but he is sharp at seeing birds or game when near to them.

When the ordinary foods are scarce in the non-sago districts, the shoots of mangrove are picked up and converted into a food, which is, however, very inferior, and troublesome to prepare. A great many different kinds of figs are then boiled and eaten. The seeds of different kinds of cycas are also dried in the sun, steeped, cooked, and eaten when nothing better is obtainable; but the pith of the cycas does not seem to be used. In the Rigo district, the fruit of a tree called "hodava," but which is yet undetermined, is much eaten in times of want. It has to be steeped for ten days in water to extract certain poisonous elements from it. The coconut is of course eaten on all occasions, but when famine arises, the trees are cut down, and the soft vegetable part is eaten. In Sudest, a great many nuts are collected from forest trees for the table. They are small, and very difficult to break open. There is no great variety of native fruits, but the mango is common, and there are numerous kinds of eugenia, some litchis, and a number of small nuts. The methods of cooking food are very numerous. Roasting is of universal use; they broil on the coals, sago, all kinds of fish and flesh, and nearly all vegetables except sugar-cane. They do not seem to eat raw meat of any kind, but it is often only slightly cooked.

In the Fly and western districts there is no pottery. The most westerly place at which pottery has been seen of local make is Hakeko, two-score of miles inland on the Bailala river. Its absence is supplied by cooking in a banana-leaf. Finely leaved green vegetables, small fish, and such-like, that could not be conveniently broiled, are neatly made into a small parcel, carefully covered with the banana-leaf, and then tied with string. This is then put on live coals. In this way they can cook fish and vegetables in coconut milk, and turn out well-prepared dishes. Buckets for carrying water, and for washing sago, they make in the gulf district by folding the sheath of the sago-leaf into the form of a small box. Water they keep in bamboos and in coconuts. Pottery from the central district finds its way as far west as to the Aird river, so that from the Aird as far east as Rossel and Nada Islands, and as far north as the British-German boundary, clay pots are made and are in daily use. There is so very considerable a variety in these that they would require a special study. It may be stated, however, that they have no knowledge of the wheel, and no glaze. They colour it by mangrove bark. The best pottery is made in the Louisiades. Hot stones are used for cooking, from Rossel Island to 600 miles up the Fly river, wherever stones are found; but not for doing so on a large scale in pits as is done in the Pacific, and of course they are not often used where pottery is plentiful.

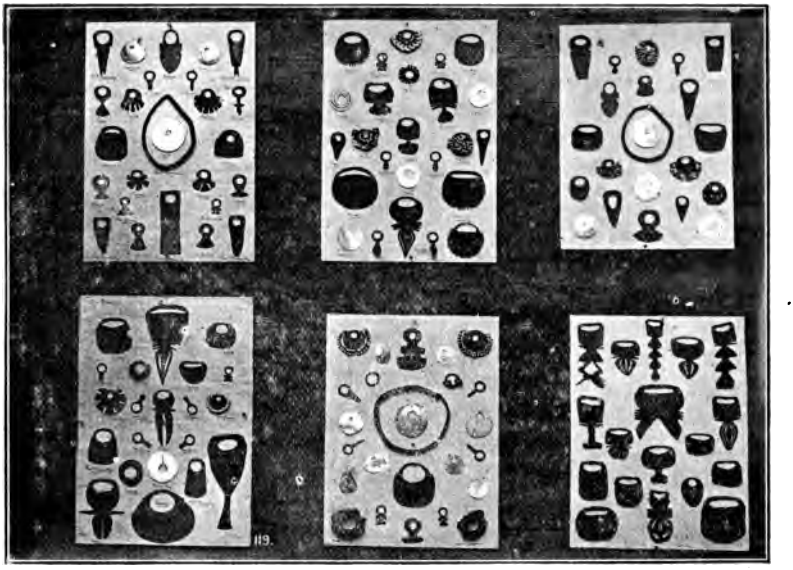
Among the sago-feeding tribes dishes are not really required, and are not much used. In the Fly district, the dishes are large shells, cocoanuts, and banana and palm leaves. Further east there are dishes of coconut, of clay, and of wood. In the Dabu and some other western dialects there seems to be no word for a wooden dish. These are best and most plentiful on Kiriwina; they are not used anywhere in the west. In some districts the fork is an elaborate article. When that instrument was forbidden or satirized in France and Scotland, and was looked on as a mark of effeminacy in England and Germany, the Mekeo man was eating his taro with a five or six-pronged fork of hard cassowary bone, and the Fijian his human flesh with a fork of vesi, or tree-fern. In the islands where there are no bamboos water is brought and kept in coconut-shells, many of which, in the Bennet group, are neatly and tastefully ornamented by low-relief carving. They have only one real meal a day, taken in the evening. The men are then usually in groups, or in the "man-houses." The wife boils the pot, puts the husband's meal into a dish, and takes it to him. From a bag the husband carries on his arm, he produces a spoon of coconut or shell, a fork of cassowary bone, and a scraper or knife of shell, which he uses in eating his meal. They are, however, often less formal than this. They do not eat trepang nor oysters, but the eggs of the green ant are used in certain dishes; of course the larger larvæ are eaten. Bartering for food or dishes is one of the great institutions of the country. The small islands of the Louisiades take smoked fish to Misima, to exchange for sago and yams. Simsim fishes for Kiriwina and for Goodenough in the same way. Brooker Island supplies a large district with dishes of clay, just as the central district does the south coast west of Yule Island. The Hula village of Keapara fishes for Kalo, as the Hula of Hood bay sometimes fishes for Port Moresby. There are many established market-places near tribal boundaries, where the people meet regularly, that the women may buy and sell food and kitchen articles.

The beverage of the Papuan is water, fresh or brackish, for he can certainly live on water containing a considerable admixture of ocean. Next to water comes the coconut, but it is drunk only on rare occasions. It is surprising how seldom a Papuan requires a drink, unless he can have tea.

Nowhere in the Possession east of the Fly river is the *Piper methysticum* used as a beverage, or any potable substitute for it. In the islands of the east end and on the mainland there are many varieties or species of this plant, some as large as small trees, others, like one at 9000 or 10,000 feet on Mount Knutsford, of dwarfed dimensions, and growing as an

epiphyte on the bark of the great trees; but none of these are used in any way by the natives.

Even on Kiwai Island a specimen of the kind that is used further west could not be found, although a large reward was offered for it. Its home is the villages that lie inland from Mawata. One would have expected to meet with it on our eastern islands and on the east end of the mainland, as being nearest to the great kava-drinking islands of Polynesia; but, like so much else, it crops up at what would be theoretically the wrong place. It is smaller than the smallest



A COLLECTION OF EAR ORNAMENTS.

variety used in Fiji, but was pronounced by two Fijians that drank of it to be also stronger. It is chewed into a coconut-shell, which is picked up anywhere, and mixed with a small quantity of water, which is drunk right off, generally by the chewer. It is taken for its own sake, for its aromatic, slightly stimulating properties, without ceremony, without any pleasing accompaniment, and without social or political significance. Neither there nor in Fiji have I ever seen a man drunk with it. It hardly affects the pulse. Once the legs of one man seemed to lose their strength for a few hours under it. In the Pacific, when drunk to excess, it undoubtedly produces very marked epidermal proliferation; but this has not been seen in British New Guinea, where it is never taken systematically.

No fermented liquor of any kind whatever is made by or is known to the natives. The juice of the sugar-cane is not fermented, and they do not know that toddy can be made from the flowering shoots of palms. They eat or drink nothing that is fermented, if we exclude the small amount of change produced in old, badly prepared sago. It seems, however, that man is so constituted that he must and will have in all climes and countries an intoxicant, an excitant, or a sedative of some kind; if he cannot drown his cares, he will artificially rouse his own spirit to face them, or he will by material aid compose his mind to bear them philosophically.

The last is done by the tobacco-pipe from the western boundary to Rossel Island, everywhere except on the north-east coast between Ipote and the British-German boundary. Everywhere a cylinder of bamboo, say about 3 inches in diameter and 2 feet long, is used as a tobacco-pipe. The cigarette is put into a hole near the end of the bamboo, and the smoke is first drawn into the hollow cylinder. But the dark Fly estuary man puts the cigarette into a holder, which is inserted into the bamboo cylinder. The native takes the cigarette and fire into his mouth, and blows the smoke into the cylinder of bamboo. In the interior this plan is not used. From the Fly river eastward the natives eat lime, areca-nut, and the leaves or catkin inflorescence of betel peppers. The lime is made by burning shells taken either from salt or fresh water. Great care is taken to carry it in gourds to prevent its becoming slaked. Of the betel and of the betel-nut there are many varieties; the best betel-nut trees are planted and tended in gardens of rich soil; the best peppers are grown as climbers on old trees near the village. The native will not, if he can help it, move anywhere without his betel gear. He eats these things all day long off and on, till his mouth becomes disfigured and his teeth fall out, or become enormously hypertrophied as at Rossel Island and the north-east coast. They are then ground for him, and he eats them in that condition. He does not swallow any part of it, and it does not seem to do any great harm to him internally. There is much social courtesy and good fellowship connected with the betel-eating, to which they treat each other much as Europeans do to more deleterious compounds. If a Papuan asks another to "take something," he means a spoonful of hot lime and its accompaniments. Much artistic effort is bestowed on the basket or bag in which the betel apparatus is kept, and the lime gourds and the lime spoons are often very tastefully and prettily ornamented. For the teethless older people, prettily carved pestles and mortars of ebony are made for crushing the areca-nut. The human craving for a stimulant or excitant of some sort is well shown in the case of the

Fijian teachers in New Guinea, who, in compliance with uncompromising blue-ribbon principles, had been induced to deprive themselves of tobacco and of their national beverage, *Piper methysticum;* they have taken to lime and betel. Surely it is not wise to try to break the native from the use of this beverage, which will in all probability turn him towards something worse if he can get it.

This is a very small matter, but it illustrates the great principle, that the best way to combat the dreadful prevalence of intoxication, which is again becoming a national reproach to us, lies in substituting something that is not deleterious, and yet can be felt by the nervous system. Why should the *Piper methysticum* not be tried for this in white communities? It is by far the most successful beverage that has come under my observation in enabling men to give up strongly intemperate habits. Instead of encouraging the mistaken zeal that tries to make it a blue-ribbon matter solely on the principles of self-denial, I would earnestly, so long as mankind is man, urge the introduction of kava-drinking elsewhere, and I should look on its introduction into this country as a great blessing. In the district east of the Fly, where the *Piper methysticum* is drunken, the eating of lime and betel-nut is not common or is unknown. It is not established on the lower Fly, but is used on the upper Fly; but the natives of the lower Fly speedily become habitual chewers when they go further east. About the Aird river a much larger but undetermined nut is used instead of the areca-nut, or used along with it.

The warm-hearted and affectionate Papuan, who, compared to a South Sea man, is a very moderate eater, denies his stomach—the seat of his affections—to manifest his grief for the death of a friend.

A touching example of this occurred lately, when the wife of a hill chief, with others of the tribe, came to visit the administrator at Port Moresby. The greatest delight of these highlanders is a meal of rice. This poor woman, in grief for the death of Mr. Gleeson, a kind-hearted, most faithful Irishman, who was head gaoler at Port Moresby, had tabooed rice to herself, and would not taste it. There is something so human and so natural in such conduct, that it makes a not beautiful old hill savage woman at once a woman and our sister.

At my last visit to Giriba, in Kiriwina, the chief had lost his wife, and had tabooed to himself the "eating" (smoking) of tobacco. After consideration and sympathy from "the Kovana," he smoked some tobacco thus given to him, but he would not use any other. Many Papuans do not eat different kinds of food for many months after the death of a relation.

From the days of David, probably from the time of Adam, up to now

this form of a self-imposed tribute of affection has been human, but it is nowhere so touching as when practised by the rude savage.

We cannot leave this part of the subject without some reference to cannibalism. In a recent book * it is said, "The Papuans of many parts of New Guinea may still be described as inveterate cannibals, cruel and treacherous." The idea of the writer seems to be that the Papuan to some considerable extent takes his meat diet off the bones of his entrapped fellow-men. It would undoubtedly be gratifying to him, in one and the best sense, to learn that he has innocently cast an unjust reflection on the race. In some parts of the Pacific there were priests or chiefs that probably ate little or no flesh except that of man. I have never heard of such a thing in New Guinea. If to be a cannibal means being an eater of human flesh, I know of no such practice among the Papuans. In a few cases, all of which could be counted on the fingers of one hand, reports have been received of a morbid-minded old woman digging up part of a dead body to eat it, apparently with the idea that she might become a sacred necromancer, as was done by an old hag last year near Dobu; but her act created horror and disgust in the district, and she was, with public approbation, visited by police prosecution and imprisonment, not for eating human flesh, which, so far as I know, is not forbidden by English law, but for desecrating a cemetery; or in some rare instances a member of a hostile tribe has been killed, and part of his body has been boiled in pots, and "tasted" by a few people out of hatred and contempt; but in no clearly established case since annexation has a regular feast or even meal been made of human flesh. Some of you will remember that a number of years ago a sensation-seeking or brainless youth ate a piece of human flesh in Great Britain; now it would be as unfair to say of the town in which this was done that its people are Caribs or Samoyeds, as it is to state that our Papuans are "inveterate cannibals." Probably some people have thought that the skulls seen in houses, on canoes, etc., were mementoes of former repasts. There were lately, and may be still, Antean pyramids of these in the Fly estuary; there were trophies of them even in the central district, at Aroma, until they were broken up by the police some three or four years ago. Two or three ornamented the house of one of the Logea so-called chiefs up to two years ago, within 200 yards of the mission station. They were common in the east end as far as Yela Island. They were not seen at Birce and other places in the interior. For preparing these trophies there was, at least in some places, a professional and hereditary boiler of heads, but

* 'Gospel Ethnology,' by S. R. Pattison, p. 85.

he no more ate the soft parts than does the taxidermist that sets up a lion's skin. It is not safe to conjecture what may have been the line of thought that moved the crazed witch to gnaw decomposing human flesh; but with the others the motive is not so much gastronomic as sentimental. It was the longing to satisfy hatred, not hunger, that made Hecuba say, *Ἀνδρὶ πάρα κρατερῷ, τοῦ ἐγὼ μεσὸν ἦτορ ἔχοιμι ἐσθέμεναι προσφῦσα.*

It was this feeling that possessed Tydeus and Ugolino, "Non altrimenti Tideo si rose, Le tempie a Menalippo per disdegno, Che quei faceva il teschio e l'altre cose." No doubt a stray case will occur yet in which human flesh will be tasted in British New Guinea, but the natives will never become "inveterate cannibals." The gentleman that wrote that of them further calls them, "Repulsive specimens of humanity." If he knew them better he would think of them and speak of them differently.

## XI. Languages.

On the dialects of the Possession much could be said, but here we must confine ourselves to a few simple observations, selected to illustrate to a popular audience how great and interesting the subject is, leaving Mr. Ray and Professor Haddon to deal with the technical aspects of the subject. In the six Annual Reports that have been issued, short vocabularies of twenty-six dialects are given. Of these, one, however, is that of Saibai, the nearest Torres Straits island. This number does not include the Motu language, which has been exhaustively studied by the Rev. G. W. Lawes. The Rev. Mr. Fellowes supplied the Pannaieti vocabulary, the Rev. W. Bromilow that of Dobu, and the Rev. Copland King that of his district. Looked at as a whole, they seem to be members of one stock, say as nearly related as English and Italian, or as Scotch with German or French. No tribe has been met with speaking a language of a different category, like, for example, German and Arabic. Of a parent language it can only be said that it is not known. Probably no language that is not written, or that is not embodied in rich legendary lore, can become fixed. The Papuan choral odes were too scanty to give form to the language, or to retain it. Not a few of them are so mangled by time or by strangers, or the dialect has so much changed in the district, that they are now practically meaningless sounds. In writing they have only reached what we may call the first stage in the arrow-headed character, the notch. This, as on the beheading-knife, and on some other weapons, had a real meaning. The final touches of tattooing indicated that a girl had arrived at puberty, and was marriageable. A man working by day,

or travelling from home, would keep his reckoning by putting a knot on a string for each day; a native, after tying up his bunches of tobacco, would stick a small wooden pin into a sago-leaf for each bunch he hangs up. A potter woman imprints her own trade-mark on the soft clay of the vessel made by her; and sometimes the warrior, by cutting on his club or weapon a rude representation of some part of his slain foe, records

SPECIMEN OF CANOE-CARVING.

the event in a rude attempt at picture-writing. There are true pictures on trees, as of birds, lizards, and the crocodile, in some places, but what they mean is not known. The snake, the frigate-bird, and the crocodile, are all cut and carved on many things, why cannot well be said by the artists themselves.

These examples illustrate fairly their attainments in writing and printing. Several special reasons have combined to make the dialects,

once they are differentiated, unstable and confused in the margin. One of these is trading. The Papuan is a born huckster, and from time immemorial there have been regular trading centres. These create small trading vocabularies, a pigeon Papuan, or a mosaic constructed of fragments from several dialects, but hardly really belonging to any one in particular. Still it cannot but affect each dialect it touches, for all are alike unconsolidated. The oldest and most experienced Motu trader dictated to myself a vocabulary of the Maipua dialect. More than 90 per cent. of the words were absolutely quite wrong. In all languages the practice exists of calling people by the name of things. This is naturally more common among people that have no history, no trades, and hardly an abstract idea. It follows, therefore, that very frequently the name of a Papuan is also the name of a common thing. In many tribes it is believed that if the name of the deceased is spoken, his spirit will return. As this is generally believed to be undesirable, his name is therefore tabooed, and a new noun is created to take the place of the one that may no longer be spoken.

The practice of chewing the astringent areca-nut with quicklime speedily relaxes the tissues of the mouth, disfiguring the lips and destroying the teeth. Clear enunciation of words is not possible when the vocal organs are in this flabby and weakened condition. It leads to general slovenliness in using words, and helps towards the general blurred confusion. In the gulf, on the other hand, as at Toaripi, the pencil worn in the septum of the nose is so thick as to shut off the voice from the normal nasal passage, and thus renders the words pharyngeal, indistinct, and ill defined in that district. Another confusing element is the imitative propensity of the Papuan. Sometimes a white man mispronounces one of their words, and the whole tribe will adopt this new departure.

It has been stated that in some parts of New Guinea, as in Java, a different dialect or form of speech is used in addressing superiors. But it must be frankly said that this has not been established, and it would be surprising if it could exist in a country where there is no caste and hardly superiors.

Great personal liberty is exercised in some tribes in the use of the letters forming different words. For example, the name of the gulf village of Mobiabi can be pronounced, and therefore also written, in about a dozen different ways. In the gulf, one of the commonest things is the use of *m* or *b*, according to the fancy of the speaker. As might be expected, *b*, *v*, and *p* are frequently interchanged at the caprice of the speaker. The interchange of *l* and *r* is so common and so widespread, that the choice between them has often to be purely arbitrary. But

in some places it is found that one may use in certain words *l*, *n*, or *r*, at one's discretion. It is, therefore, not difficult to see that marked dialectic differences would arise in a few generations.

In writing our dialects, the system recommended by the Royal Geographical Society and the Admiralty is followed. In New Guinea dialects there are sounds that cannot be represented on that system. One of the most common of these is the break or interruption; this can be represented to some extent by inserting a comma in the place of a letter. But very frequently a native, when asked to repeat one of these limping words, promptly puts a *k* in the vacant space. This is, therefore, the natural way of dealing with it, and this could be followed in printing and speaking without inconvenience.

It seems better, when this system does not fully represent the sound to be dealt with, to write it in the letters that come nearest to it. This, of course, is not rigidly scientific, but it is the practical and most useful method, both for the present and for the future. It is perfectly true that the letters of our alphabet cannot, by any possible combination of them, be made to express many Papuan sounds that seem to be a blend from two or more of our letters; but our alphabet, and their sounds, correspond so nearly that any departure from the ordinary alphabet is strongly to be deprecated. Let the dialects be written as they best may in our letters; the change required in the word to adapt it to our alphabet is but small, and the dialects are all only too plastic. It is very likely that Cyrillus, by his compound and deterrent alphabet, has contributed more than anything else to the isolation of Russia. The new sound and signification, given apparently quite unnecessarily, to the Fijian alphabet, has created permanent confusion. Let these serve as a warning to us all in New Guinea.

The other day, on my asking a Malay in Batavia what o'clock it was, he held up a hand and said, "Lima." The same word would have been used by a Fijian to express the same meaning. The same word or some modification of it will be found to mean "five" in sixteen of our printed dialects. This indicates roughly the position of the family group of Papuan dialects.

The black small heads of the lower Fly and neighbouring district fall furthest out of the line, but all our known dialects more or less overlap each other, like the scales on the side of a fish.

The presence or absence of a series of consecutive numbers in a language is of interest in tracing the relationship of different dialects. It also throws much light on the habits of the people. Numbers will assuredly not be created purposely; a trading tribe requires them; the man that does not barter does not need them. The bushman can confine

his counting to his two hands; the trading man will soon extend the system to his fingers; then his toes follow, and a leaf or some other convenient object serves as a new starting-point.

Let us look for a moment at the first five numbers in the printed dialects, compared with those numbers in Fijian, as representing the languages spoken in that part of the Pacific. Nineteen of the twenty-six have two, or three, or even four of the first five numerals of the same origin as the Fijian. To these may be added the tribes on the north of the Maneao range, and the Motuans of Port Moresby. The connection with the Fijian numbers begins at Yela and Nada islands on the east, and extends along the coast till it meets Toaripi, where it is quite lost with the probable exception of a single number at Orokolo (Havida), which has long traded with the east. But at Port Moresby we meet with two peoples beside the Motuans—the Koiari, a hill tribe, and the Koita, a coast tribe —whose numbers are not Polynesian. The Koita were probably always a commercial people, for they have endless numbers of their own. The Koiari, on the other hand, an inland people without any coast trade, have only two numbers, for a binary system of enumeration. When pressed, they can use these by cumulation to represent the numerals up to five. When the Fijian numbers are departed from, the numerals become few in number, really not exceeding five, except in the case of the Koita. Orokolo, which has a suspicion of the Fijian numbers, is an exception, and counts up to twenty-seven. The Fly estuary and the Koiari have really only the two first numerals. Still, the Koiari man calls an ant "kadi," and a banana "upi." It is noteworthy that the numerals do not resemble each other in the different dialects that have no Polynesian numbers. To a considerable extent these first five numbers are representative of the superficial relations between their respective dialects, but not entirely so, for the apparent want of relationship on a direct cursory comparison between the Fly estuary language of Kiwai and the eastern dialects is, by using that of Maipua as an intermediary, found to be misleading.

Not long ago I sat at dinner next to a gentleman of the Maori race. We soon found that his native language was clearly represented in many of the dialects of British New Guinea. Naturally, these relationships are easiest to trace in the names of common objects in the Pacific and New Guinea. For example, the name of the principal river in Fiji is "Rewa." I had often tried to find there whether that word had any intrinsic meaning, but tried in vain. The principal river on one of our eastern islands in New Guinea is also a "Rewa;" but among certain tribes at the foot of the Meneao range, and on the south coast also, as far west as Hall Sound, this word means "a stream of fresh water." In

Fijian, the word for "water" is "wai." It is found as far west as the dark men of the gulf, where it is met with in the Turama or Gawai estuary. "Turama" represents the "turi" of the Fly estuary, having the same meaning as "wai," so that the two terms are actually applied to the same place; but they cross each other, as the Turama is the eastern and the Gawai the western entrance to the river. Native traders from the central district have not in modern times travelled so far west. The "wai" is also found in the neighbouring channel of Waiaro, perhaps also in the "Aumo" channel, and in the "Auro." As if to spite the inferences of travellers, "wai" crops up in the inland Mekeo range as "we," and it is finally found in "kiwai" in the Fly estuary, which probably means "kai wai," "water-men" in Fijian; and the Gagowaia is a branch of the Turama in the interior. Nearer the coast, in the east end of the gulf, it becomes "bia" or "pai," and, as if to make doubly sure of the relationship, we have "waiwai" as "water" at Pannaieti in the Louisiades. A similar language-relationship can be shown by the word "oro" or "koro." Those who wish to do so may begin with the Greek word; but we shall start with "koro," a village, and Goro, the name of a hilly island in Fiji. This word corresponds exactly to the "berg" of the Teutonic languages. We meet with it high up the north-east coast of New Guinea. The great mountain range that lies north-west of Mambare is called Wasigororo. It may be noted that the Wasi appears again, say, a hundred miles west of the Fly. They call the little river that enters the sea at Cape Sudest, Tambokoro; the great mountain of the north-east coast is Goropu; the tribes on the Lower Kumusi call the great mountain range south of them, Kororo; the Tambokoro of Cape Sudest becomes, by inversion, Oiatabu in Mount Kilkerran on Fergusson Island; and Tabukuia is the name of the hill from which is got the fine stone for adzes on Murua; it appears as "Ovia," "Hobia," or "Sobio" in the mountain on the south-west of Duau; it is quite common as "goro" or "oro" on the mainland near Mairu. The same root is probably found in "Aroma" and "Galoma." The native name for Mount Obree is "Wonorogoro;" it is of great interest to note that the principal village of "Goroni," near the main range inland from Aroma, is "Manumanu." Some tribes call the Owen Stanley range "Jobi;" while the word then becomes "Kovio" in Mount Yule, and is also met with in the reduplicated "Orokolo" in the far west. But in all this one must be ever on one's guard. Orokolo is the name given to this place by people from the east, and seems to have been adopted by the mission. Its local name is Havida. But the same great root-name is met with further west in the Waioro and in the Kikori rivers, to signify that they are mountain streams. It is found also in the Purari

villages of Koriki and Koropenaira. Finally, the name may be noticed in Geelvink bay, as the name of an island, not far from which also are met clearly and distinctly the Malayo-Polynesian numerals.

SHIELDS.

In the same way, "vanua," "land," in Fiji, is very common as "panua," "banua," "pana," "ana," "hanua," from the Louisiades as far west as Kabadi. It is not by mere coincidence that the same word means "woman" in Maori, at Aroma, at Port Moresby, and among the mountaineers of the Mekeo range, and that the same word signifies "my son" at Port Moresby, and at Biroe, 130 miles up the Purari river; nor that the island of "Wagalasu," in the Lausancy group, means "false ship" in Fijian, or that the twin island of Orangerie bay is called "Tautauwatu," in Fijian "all the same." But it must not be supposed that the relationships are always so obvious as these, which are merely given to show you that the study of these languages will be of great interest, and that they seem to be all related to each other. We know from experience that the subject is full of pitfalls, although it is very inviting.

Their speech does not seem to be so rich in figurative expressions as in Polynesia. The stomach being the seat of the affections, a man's stomach becomes "very sore" when his friend dies, and it "burns" when he desires to fight. The stomach of a Mekeo man "throbbed to kill some one." The Papuan does not, like the Englishman, Frenchman, German, and Italian, convert his tobacco into smoke; he "eats" it—perhaps because the Fly estuary man takes into his mouth pipe, tobacco, and fire in smoking. Like the Fijian, he in some tribes "eats the rod;" and when he is sick he "pours water from a bamboo." He sometimes finds a name for a new article when he does not know the real one, by naming it after the donor: tobacco was "tamate" (Chalmers) five years ago in Mekeo; and turkey red was "missionario" in Murua and Nada. As they had no supreme being and no prince of darkness in their demonology, they could not swear by them; but there never were more apt pupils in making good these blanks in their vocabulary by borrowing from ours. Some of the onomatopoetic words are decidedly pretty and expressive. The great manucodia bird of the D'Entrecasteaux group is called "bulibuli," which irresistibly recalls the Persian "bulbul;" the domestic fowl is "kokoroko;" the whistling duck of Dabu is "peuleule;" and the twittering swallow is "kwakwatir;" and thunder is "gururu." It is curious to note how words sometimes change their significance in different neighbouring tribes. The Koiari man calls his yam "sago," and his taro "uadu," which recalls the "uvi," which means yam; and he names a feast "tarukima," using for this the classical name for taro. "Magani" means "fish" to the Motuan, and "wallaby" in the Keakalo district.

Although the dialects are scientifically connected, it often happens that natives that have lived a generation within a very few miles of each

other cannot understand each other's speech. When a Louisiade man goes to Murua with the administrator, he speaks English to his new friends there; and now, over a very large area in the east and west, this is becoming common, while Motu is perhaps the most widely used tongue between them.

Doubtless the explanation of the great number of dialects is to be looked for in the isolation of the tribes from each other. This and the suspicion and timidity in their character must be associated. Probably this nervous and sensitive mental tone arose to some considerable extent from their physical environment, consisting of jungle or of deep narrow glens united by dense and shady forests, in a country of extent greatly exceeding in proportion the numbers of its denizens. It has been said that we have printed twenty-six of the dialects. They have been prepared for ordinary travelling and similar purposes, are very incomplete, contain many errors, and are only a commencement in a great field of labour. Professor Haddon and Mr. Ray have taken up this study systematically and on scientific principles.

## XII. Houses.

The type of house is as different in the several districts as is almost everything else. West of Yule Island it is customary in many places, both among the black people of the coast and among the lighter-coloured tribes of the interior, to have large "man-houses" for the males, and smaller "woman-houses" for the women and children. The "man-houses" are sometimes several hundred feet long; those for women are always smaller. But in certain districts, as on the Fly estuary, there are not separate houses for the sexes, but a great number of families live each in a different stall of the great house, which is of vast size, at Idagositia, 520 feet by 30 feet, the share of each family being laid off by open bars. The great man-house is, on the coast, shaped like a coal-scuttle, the small end open and very frequently ending over water or swamp, which serves as the refuse-pit for the filth of the occupants; the great end, however, sometimes turned towards the sea and closed, presents a front nearly perpendicular. If not too much exposed to the wind, the large end is usually shaped like the open mouth of a crocodile. Inland the houses are generally straight-roofed, and with each end completely open. They are square or oblong. On the Fly they begin now to build small houses.

In the east half of the mainland, and in the islands, each family has its own house. They do not build on a single central post, but always with roof-tree or extended ridge. But there is an exception to this in the mountains of Mekeo, where the houses are conical, like the houses

of the mountaineers in Fiji. In perhaps all districts, except in the Louisiades, where the roof is shaped like an inverted whale-boat, there is a verandah of some kind. Another feature common to the whole Possession, with the exception of only a few tribes, is that the houses are built on posts, so that the floor is usually from 5 to 10 feet from the ground. This allows fires to be used below for cooking or for driving away the mosquitoes, and where there is no verandah they sit below the house during the day. In parts of the D'Entrecasteaux group the roof is shaped like a Turkish saddle, just the reverse of the boat-shaped roof of the Louisiades. The latter is the best and most scientific form of roof that can be invented. It will be remembered that the Yela canoe is also the best in the colony. Their cultivation is, however, the worst in the Possession.

On the north-east coast a small square house, lightly built, with a mansard roof and a verandah on one side, is the general form; but on the Mambare there are elliptical houses well thatched with small square entrances and no verandahs. The Louisiade house is entered either at the end or by a small trap-door through the floor. The great man-houses have the main entrance at the large end, but there are often some small side doors. Native doors are never made of boards. Sometimes ladders, or a notched stick, are used for getting up and down, or one swings one's self up by a suspended looped cane; but more frequently access is by means of a few roughly placed trees. It is generally difficult, and requires care. It is extraordinary how well the native dingo has learned to walk up these ladders and sloping sticks. The pig, though of such great intelligence that in its wild state it can build a good shelter for itself, has not learned to ascend the house ladders. Where there are sides to a house, they are built of leaves, grass, or sago midrib. The roof is thatched with palm-leaves, grass, or sugar-cane.

People of taste often carve wooden door-lintels, which they paint and decorate with shells, etc. Others put strings of white cowrie-shell round the ends of the house beams, or carve projecting stumps into the form of the crocodile's mouth. On Manonetti there are grotesquely carved door-posts representing the human figure. The sacred dubus of the central district had elaborately carved hard-wood pillars, usually in beaded work. The floor is formed of pieces of old canoes, or more generally of split palm with the smooth glazed outer rind uppermost. All tribes build houses, and all have fixed places of abode, although the tribes in the swampy west are often absent from home. None of them live in caves or in the ground, unless hiding temporarily. House-accommodation seems to be often very limited for the members of the population. Stones and clay are not used in building houses, but

stone walls are used for terracing planting land on Goodenough Island. Clay is used only for eating—which is not common, however—for painting, and for making pottery and fireplaces. A curious custom at Yela Island is the erection of a small divan, raised a foot or two with flat stones, in the village or on the foreshore, with stone slabs put in the ground and projecting high enough to serve as a rest for one's back. In the east end similar divans are built in the village square, but often without the back support.

## XIII. Bridges.

The best bridges that have been seen are the pile bridges of Kiwai Island and in the Purari delta, and the suspension bridges on the Vanapa and upper Angabunga. That on the Vanapa must be about 70 or 80 yards long, and rests on strong knotted canes fastened to trees on each bank. These bridges were certainly built without any prompting from foreigners, and are really ingeniously and strongly constructed. That on the Vanapa is V-shaped, the passenger walking inside the V on the canes that form the lowest strands of the structure.

## XIV. Industries.

On native industries there is not much to say. The two principal manufactures are pottery and canoes. The former is much practised from the Louisiades to the gulf, by certain tribes. It is not worked by the dark man. Though there are professional canoe-builders as at Murua, Pannaieti, and Keapara, yet all natives can build canoes. The manufacture of stone weapons is so rare that it can seldom be seen. Tools were thorns, bone, shells, flint, wood, and stone. They had no mineral in the metallic state. The principal tool was the stone adze, and perhaps next to it in utility came the drill, armed with flint and driven by the outside cross-bar. They had no mill, but ground things by the stone hammer and the pestle and mortar. A good deal is done on the north-east coast in beating out native cloth with mallets, and hand-painting it. Growing food for sale and smoking fish were the only industries of some tribes, whilst netting and catching birds, and making decorative plumes of their feathers supplied hill tribes with something to barter for the manufactures of the coast. At many places on the coast large shells are sawn up by a soft, sharp-edged, wedge-shaped stone, and made into nose-pencils; others are ground down by rubbing on stone and converted into necklaces and pendants. All can and do make nets, of very varying fashion and dimensions. The best fibre is from the aerial roots of a kind of pandanus. Fishing for dugong, turtle, and fish are for many coast tribes important industries.

The pulley they have not invented, nor do they know the wheel, but the lever they work cleverly, as mentioned under "Canoes." Many coast tribes make and sell models of their canoes. Animal-raising is confined to the dog, the pig, and the fowl. The typical dingo is an orange-coloured dog, which does not bark; but the cross with a dog barks. They are often of more value than a pig. The dingo is found everywhere. At Rossel Island it is sometimes black; white ones were seen in the Mekeo range; at the centre of the island they are yellow. The best pigs are not sold to the white man, but are kept for great feasts or for sale at very high figures. There are not many in the sago tribes, but in the yam districts like Kiriwina, pig-breeding is an important industry. The domestic and wild animal seems to be the same species—a leggy, handsome animal of the colour of a hedgehog. The Papuan is fond of the boar's tusks, but cannot grow the circular ones met with in the Pacific. Perhaps no Papuan one is more than a third to half a circle. The natives of the interior are extremely fond of salt. In Fiji the making of salt was a regular industry with coast tribes for the supply of the inland people; but, oddly enough, no instance seems to be known of the Papuan making salt for any purpose.

In the sago districts, many tribes manufacture sago for barter with others. The gulf tribes now require the Port Moresby people to pay them in cutlery instead of tobacco. Before long they will demand money, as many natives now do from the European employer. In some parts of the east end very handsome baskets, meant to carry the betel gear, are made for sale. So are lime spoons, lime bottles, and mats of pandanus leaf. Some of the tribes can do plaited matwork remarkably well; almost all use it for making cross-belts of plaited straw, or for girdles or armlets. But none of them ever make mats like the fine ones of Samoa or Rotumah. In some tribes net bags are a specialty, made to hang on one's arm for the transport of one's property. Some of these even go so far as to make net hammocks for sleeping in. Twine is made by twisting fibres by the fingers, or by rolling it on the thigh. It is often very fine. It is made from pandanus, coconut, bananas, and hybiscus.

Before the general ethnological part of the subject is left, a fact may be mentioned that doubtless many of you will be glad to hear. Timely warning has been taken of the omission by Fiji, Hawaii, and some other places, to secure collections of the arms, implements, and arts, etc., of the natives before it is too late. The colony was not in a position to erect and maintain an extensive and costly museum. But the Government of Queensland was equal to the occasion, and an arrangement was entered into between the Possession and Mr. Morehead, then Premier of

Queensland, whereby a flat of the present Queensland Museum is set apart for the New Guinea collection. When the new Queensland Museum is built, a wing of it is to contain the articles belonging to New Guinea. The Possession in this way already possesses an extensive and very valuable collection of things illustrating the present condition of the natives, its natural history, etc. This will be added to, and, I trust,

RUBBING OF PART OF THE DECORATION OF A DRUM FROM THE FLY RIVER.

may never be broken up and dispersed. It is the property of the Possession, and should never be alienated under any circumstances.

## XV. Missions.

There are four mission bodies at work in the colony. By mutual understanding they occupy separate and distinct districts. The oldest is the London Missionary Society, which commenced operations in that part of the world some three and twenty years ago. They occupy the coast-line from the British-Dutch boundary to East Cape, with the

exception of Ravao Island and the Mekeo district, which is being worked by the Roman Catholic Mission of the Sacred Heart.

The force of the London Society is sufficient to occupy only part of this great coast-line; their operations do not extend at any point to more than half a dozen miles from the sea, so that there are many hundreds of tribes in their district that have never seen or heard of a missionary. When this mission was started, and for many years afterwards, they were exposed to all the dangers, privations, and obstructions that in a quite new country confront pioneers. Progress was then necessarily slow; that so much was made as was actually the case is surprising. It would have been rash and unwise to move inland, especially as they have only been able to occupy but part of the coast-line even up to now. They were fortunate in their first missionaries, and the names, for example, of Lawes and Chalmers will always be associated with the early history of the colony. This mission has probably four-score churches and schools in operation now.

The Sacred Heart Mission was planted on Ravao Island by the late Bishop Verjus in 1885. This young prelate was a man of good education, of great courage and activity, loyal to the government and his own Church, tolerant to other workers, and eminently qualified to become a great missionary. He has been succeeded by an Italian gentleman who is worthy to follow such a predecessor. They have some half-score of schools and churches at work on the mainland, where they occupy a district about 10 miles on each side of the Angabunga, and are fast extending inwards, so that they will reach the foot of the great mountain chain very shortly, if they have not done so already. They have about half a score of Sisters who perform household and domestic duties at the stations, and teach the little native girls. This mission probably numbers now about two-score devoted workers.

The Anglican Mission is understood to have as its field of operations the whole of the north-east coast from East Cape to the British-German boundary. It was opened in 1891 by the late Rev. Albert MacLaren. He was an enthusiastic missionary, possessed of much originality, and capable of feeling with natives the sincere sympathy that alone ever enables a man to obtain their full confidence. His death, a few months afterwards, was a blow from which the mission never recovered. The Rev. Copland King has done all that he could do under such circumstances, left as he has been without a staff, although provided with accommodation for it and with means of transport. The result has been that, in spite of the honourable efforts of the devoted Mr. King, this young and tender offshoot of the great National Church has been left hopelessly behind the other missions. There is reason to believe that this fact is now being

recognized in the proper quarter, and that Mr. King will receive the assistance he should have had long ago.

The Wesleyan Mission occupies the eastern islands. This Church is vigorous and active in New Guinea, and has further this great advantage, that its energies are guided by remarkable intelligence. The mission, consisting of some four European ministers and about two dozen native teachers, was brought down in 1891 by the veteran missionary, the Rev. Dr. George Brown, and in a few months was well at work. They had a very wild and savage set of tribes around them, but the deep characteristic earnestness of the members of this mission has already produced a profound impression on many tribes, and secured Sunday congregations sometimes numbering 400 or 500 persons.

It has been a matter of much surprise to me that I have very frequently been asked, since my arrival in this country, whether missions to aboriginal peoples do any good.

It has been my lot to see much of mission teaching among coloured people during the last two or three and twenty years. If, therefore, I venture to speak clearly and frankly on this important subject, let it not be hastily put down to the boldness of ignorance or to the presumption of inexperience.

Of the work of conversion, of the spiritual results obtained, in New Guinea, it would be unedifying and impertinent to speak here; but as to how mission work affects native society and the state, that we may freely discuss.

It is to be feared that many of us are apt to forget that the missionary is constituted like other men, and that he is, therefore, as liable to err as another. Were it not so, how could he be in sympathy with the rest of mankind? They are as other men are, and therefore there are good and less good missionaries and teachers. But as a class they are the most self-denying men, and lead the best lives of any category of men of whom I have any knowledge. I cannot think of one that ever enriched himself. Thousands and thousands of travellers have experienced their ever open hospitality, often without knowing that their hosts had to reduce their own fare in order to decently entertain the stranger. As an example of regular and moral life, the presence of a missionary would be valuable if he never taught anything else. This is especially true where the mission-house is kept as a home by the wife that, to stand by her husband, has so often to leave her young children in some far-distant land. Women like Mrs. Lawes, Mrs. Pearse, and Mrs. Brownlow do probably as much good as their husbands, and be it remembered that they do it at much greater sacrifice, and are therefore entitled to greater respect for it. The coloured teacher is very often condemned. He frequently does

what is wrong, because he is very human, is poorly educated, and is often left too much alone. But as a class they are entitled to our greatest respect and sympathy. They have no prospect whatever of any considerable material advantage; they leave their own smiling homes to go among strangers that are never grateful, and that sometimes take even their lives. Their work is never made known to the world; they are practically left without any sympathy and without any encouragement, save the natural satisfaction derived from the consciousness of duty well performed. Yet, under these circumstances, many of them do good and lasting work. The veteran South Sea teacher, Ruatoka, and his fellow-worker Sunai, in the London Missionary Society, could not be better men if they belonged to our proud white race.

But the influence exercised by the example of the life of the missionary is a small advantage compared to his other services. In these days, when socialism is put in practice to the extent that one man pays for the education of another man's child, and the teaching of the young generation is carried out chiefly at the expense of the state, which now in such matters takes the place of the parent, the labours of the missionary in a place like Fiji or British New Guinea are brought into stronger relief than could well have been the case formerly. In those places the state has never been in a position to educate the children of the country. This great duty is left to the mission bodies; missionaries, therefore, are performing, without cost to the state, one of its great functions, a labour which of itself is more than enough to justify their presence. It is perfectly true that tribes can be reconciled, that murders can be stamped out, that thefts can be controlled by the government, and trade can be established, where there are no mission stations; and it is also the case that mission teaching cannot effectually put down intertribal fights, murder, and theft, any more than the Church can make the policeman unnecessary here; but mission influence has sometimes prevented intertribal war and has reduced the frequency of murder, and in all cases it tends to make the work of the magistrate and policeman lighter. Peace is easier to establish, and, when established, is easier to maintain, in a mission district than elsewhere. Tribes near a mission station, as a rule, fall more readily into the ways of the white man than others. Through the missionaries as a class, the natives learn to entertain a higher opinion of and greater respect for the white man than would otherwise be the case. Looking, as administrator, at the presence and work of the missionaries, the above is my answer to the question as to whether they are useful or not. It practically amounts to this, that they are indispensable. It is not known to me that any officer that was responsible for the well-

being and development of a primitive native race ever entertained a different opinion.

In British New Guinea, however, we need many more missionaries and teachers than we have. We have probably hundreds of thousands of natives there who are our fellow-citizens, and who have never heard of the gospel, of the charity of the Christian religion, or of morality. They have no old literature and ancient religion to break down to make room for the gospel; they will always remain subjects of the empire, and never be abandoned to another power; there is a government that is only too glad to facilitate mission work in every way it can. The force of teachers at present at work there, the money now being spent in New Guinea by our mission bodies, will never reach the whole of our own aboriginal heathen in that colony. The London Missionary Society must occupy the whole of their coast-line and extend inwards; the Anglican Mission must really take up work in earnest and become greatly extended; and even the Wesleyans be considerably reinforced before these several bodies can perform what is incumbent on them. The Sacred Heart Mission will soon occupy its field. In New Guinea we therefore look with wistful eyes at the great expenditure of men and money sent from Great Britain to foreign countries for mission purposes, while so many of our own native heathen offer a virgin soil and are utterly neglected. The question is not one of whether it is desirable or not that the old yellow races should be converted to Christianity; the point is this—where with most and best result can mission work at the present time be carried on? It is difficult not to think that this would be among our own aboriginal heathen, who surely have also the first claim on us.

This is the account we have to give of the country and people of British New Guinea. Out of this the three colonies of Queensland, New South Wales, and Victoria are endeavouring to construct a new province of the Empire. How this is being done must be left for another paper.

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Before the reading of the paper, the PRESIDENT said: We have the great advantage this evening of having present with us Sir William MacGregor, the administrator of New Guinea, who has done so very much towards the exploration of that previously unknown region during the six or seven years of his administration. I remember, some years ago, listening to a most interesting paper on his ascent of the Owen Stanley range, but this is the first time we have had the pleasure of welcoming him in this hall in person.

After the reading of the paper, the following discussion took place:—

Rev. JAMES CHALMERS: I am sorry that Sir William Macgregor has not been able to read the whole of his paper, as he has refrained from saying much we should

like to have heard; only we can safely say that what we have heard is all true, and there is no man living who has ever been to New Guinea who can say it so well as Sir William Macgregor. Sir William has renamed Mount Owen Stanley, which I think is a pity, and I question if it will be adopted. I remember some years ago that a great explorer proposed to change the name of the Congo to the Livingstone, and in the map accompanying his book he printed Livingstone, and left Congo out; but it has not been adopted, and we never hear of the Livingstone now—it is always the Congo. And my impression is, that the mountain we have always been accustomed to call Mount Owen Stanley will retain that name, notwithstanding Sir William's alteration; but I can leave it with you geographers whether the name should be Owen Stanley or Victoria. The question has been raised as to whether there is not some connection between the natives of Torres Straits and the natives at Dau Dai. Last year, before returning, I ascended the Fly river, and met tribes who had never been met with to speak to before, and was astonished to find names of people corresponding to names in Torres Straits. For instance, a name very common, Saibai Darom, was the name of a leading man brought to us. We went into a village about 85 miles up, and there we tried some drums, which the natives would not sell. They were the same as I had seen on the Mai Kussa a few months before. It is quite likely they have communication with the people in Torres Straits, or even at one time may have crossed over Torres Straits from Australia, and have through better living become a finer people physically.

Sir William Macgregor has spoken of the introduction of civilization. Well, I am always in a difficulty to know what civilization is; but I can only say that, so long as Sir William is governor, he will help to make them a better people. It may be satisfactory to the Fellows of this Society to know that he has done all he could to help and defend the natives, by refusing to allow them to be supplied with spirits or with arms, and if they do not get spirits, they will advance and become better men and women.

In reference to marriage, Sir William seems not to know that we have tribes in the gulf that do not sell the young women; there was nothing given in exchange until recently. Within the last few years at Motu-Motu, for instance, they were not sold, but arrangements were made; payment was made for the widow, and she had to be highly paid for to her former husband's relatives, whose property she had become, and they supposed, if she left them, she should be paid very highly for, perhaps on account of her experience.

In reference to cannibalism I agree partially with Sir William Macgregor. He lived for a long time in Fiji, and I suppose we have no class of natives so terrible as they; therefore, by contrast, he may be right in saying there is no cannibalism to speak of in New Guinea. Eighteen years ago there was a cannibal feast 1½ mile from where I was. The natives at that time would sit down and tell you which was the best part to eat. Pig, bread, and fish were nothing; man was everything. It was confined to certain districts along the coast, but along great distances of the coast-line we had none. Certainly it was not so bad as in Fiji and the South Pacific Islands, but it is certain that there are cannibals in New Guinea. Some people seem to think they are so because of the want of animal food; it is rather owing to revenge or undying hatred. I remember once, in a boat in the gulf of Papua, two of my crew began to quarrel; they both belonged to the east end, and when I woke up they were nearly coming to blows, and the one was saying

to the other, "I did eat a little bit of your father," but this the other denied. I remember at Port Moresby, or a little village 4 miles away, a young man was taken by a crocodile; all they saved was his middle part, but his wife, children, father, mother, and friends sat round and eat it, out of mere affection.

In conclusion, I thank Sir William Macgregor for his reference to the missions. I am glad that all the societies are working harmoniously together; that our brethren of the Sacred Heart are doing a grand work; they are all friendly, and to me it will always be a pleasure to remember I was a friend of the late Bishop Verjus. I trust I shall also be a friend of the present head of the mission—a gentleman who has only recently gone out. I can safely say for the missionaries of the London Missionary Society, we shall not be a party to the introduction of bigotry, for I care not whether in Great Britain or New Guinea, it is odious, and where I can assist him or they can be of assistance to me, I shall give and accept. I must also thank him for the kind words spoken of me personally.

Admiral W. J. L. Wharton: I have not myself unfortunately been in New Guinea, and cannot give any information on the subject. I am very glad to have an opportunity of expressing our great indebtedness to Sir William Macgregor for the work he has done there. I think, to those of us who have ever known the joy or wished for the joy of exploration, Sir William Macgregor is a man very much to be envied, because I don't know of anybody who of late years has had so much to do with new country. This enormous coast-line, 3000 to 4000 miles long, has been traversed from one end to the other; he has gone round every bay, ascended half the mountains, and spent a very great part of his time in exploration, and in making himself acquainted with the district, and he has added very largely indeed to our knowledge of the topography and geography of the island. The shore-line was somewhat hazily known by the work of naval surveyors about forty or fifty years ago who had skirted along it, and in many instances had just sighted the land, being kept off by the reefs, and Sir William has filled that in in a way I can only describe as extremely admirable for the means and time he had. Sir William Macgregor touched very slightly on a very interesting little point to me, interesting to all geographers—the small islands eastward of Kiriwina; extraordinary upraised coral atolls, where the inhabitants live completely out of sight from the sea, concealed from everybody in a state of wonderful peace and quiet. I hope he has given a little more in that part of the paper which he has not read. He has described them fully in the detailed official reports, which probably have not been seen by the Society at large. I do not know that I need say anything more, but again thank Sir William Macgregor for his admirable paper and the work that he has done.

Mr. Basil Thomson: I think that the part of this paper which interested me most was a part that was not read (I had the privilege of seeing the paper before we came to this hall); it was the portion dealing with the present state of the natives of the Louisiade and D'Entrecasteaux groups. Six years ago I had the honour of being a member of Sir William's first expedition to these islands. When we landed, it was always a question whether the natives, in their excitement, would use their weapons or not. We generally tried to overcome their distrust by playing upon their commercial instincts. In many places trade began at once in knives, tobacco, red cloth, and looking-glasses; but in one bay none of these would tempt them. They were in a dangerous state of excitement. At last one of us had an idea. He produced a copy of the Brisbane *Courier*, and tore it into minute squares. There was at once a run upon them, and I doubt whether any copy of a

newspaper has sold so well since printing was invented. In another bay even this device failed, and we had to send on board the yacht for the mate to play his concertina and soothe their savage breasts. In another place, on the north side of Ferguson Island, they were given some tobacco and an empty bottle. They put the tobacco into the bottle, poured water upon it, and, after shaking it up, drank off the compound. To those who know what black twist tobacco is, I need not stop to describe what followed. At another place we were driven to resort to a less reputable expedient. One of us produced a bottle of strong ammonia. He induced the yelling crowd to sit down in front of us, and then, without drawing the cork, sniffed the bottle vigorously. Then withdrawing the stopper, he handed the bottle to the noisiest of the natives, who followed his example. There was, as the newspapers say, a sensation. On the northern coast of Ferguson Island, at intervals of a few miles, we found bushes planted in the sand. When we had made friends with a tribe, they took us as far as their bush, but nothing would induce them to go a yard further. The reason was obvious. We generally saw a crowd of natives on the other side of the bush waiting with spears in rest. The bushes were their scientific frontiers, and from what we could gather from the unflattering accounts they gave us of their neighbours, it was certain that they were in a constant state of intertribal war.

I mention these facts to illustrate the extraordinary change that has been wrought in half a dozen years. At this moment I understand that thousands of these people attend services every Sunday. This result has been produced by three or four Wesleyan missionaries. Men like these have a great civilizing influence. We do not know that the conversions they have effected are deep or genuine, but the result is none the less remarkable. All missions, it is true, have their period of temptation : it comes when there are no more natives left to convert. Then they occasionally misuse their very great influence by mixing themselves in political affairs, and interfering too much with the social habits of the people. One of the speakers this evening very pertinently asked, What is civilization? In the Pacific it has unfortunately been held to mean clothes, which are no doubt an essential, but not *the* essential part of civilization. The missionaries who hold that the natives must first be clothed, too often insist on a complete change in their life and habits. I have seen their mistakes in Polynesia, and I must say that the attempt to inculcate family life according to our ideas usually results in a decrease of the population. May the missionaries of New Guinea long avoid these mistakes.

I do not feel that I can criticize the admirable paper that has been read to-night, except to say that it has at once the merit and the defect of being impersonal. I do not think that the first personal singular occurred throughout, nor even the first person plural. No doubt many papers read in this room, giving accounts of personal adventures, approach the other extreme; but it must not be forgotten that the reader of this paper has been the only European to stand on the summit of Mount Victoria, has ascended the Fly river to the German boundary, has penetrated further into the interior than any other traveller, and has added enormously to our knowledge of the flora and fauna of the Possession. We want details of these achievements, and we think he owes a duty to us to rescue this vast mass of information from where it lies buried fathoms deep in blue-books, and to give it to the world in book form. It is easy for us who sit comfortably at home to talk about a man's duty,

but I take it that there is no one in this hall who, with true British selfishness, does not think he has a personal claim on Sir William to have the record of his achievements made more accessible.

Professor HADDON: I must cordially endorse the last remarks of Mr. Basil Thomson, for those who have not read Sir William Macgregor's reports will be surprised at the immense amount of geographical and ethnographical information which they contain; not only this, his despatches are written in a most interesting manner, and some of his pictures of savage life are extremely vivid and living, and it is a thousand pities they should remain buried in blue-books. Those who have perused these reports, and compared the accompanying charts with those issued by the Admiralty, are struck with the amount of geographical information which has been added by Sir William Macgregor. The hydrographer has alluded to that point, and he knows it better than any one else. I speak not as a geographer, but as one of the general public, and would like to say, on behalf of those who follow these matters, that the best work Sir William has accomplished is the way in which he has pacified the natives, and rendered life and property safe, and assisted them towards self-government. Almost anybody with sense can be a traveller, or with training can become a geographer, but there are very few men who treat natives as Sir William Macgregor has done.

One reads how D'Albertis "opened up" the Fly river; by "collecting" he means frightening people away from their villages, then going into the houses and ransacking them; he then comes back and says, "I have opened up the Fly river," and the result is that where he collected specimens there the missionaries and Sir William have invariably been attacked by the natives. Quite recently Dr. Loria, also an Italian, was collecting on the north-east coast, and you will read in the blue-books that he came back boasting of what he had been doing. At one place the natives told him to go away, as is the usual custom of the Papuans when they do not want to be interfered with; but he had gone to get specimens, and was so exasperated that he fired into the village to frighten the inhabitants away, then made a great collection, and even opened two graves. He brought his spoil away and took it to Port Moresby; if he had been a shrewder man he would have quietly sent it all off to Italy, and said nothing about it; however, he boasted, and had to disgorge the specimens. Sir William went back at the first opportunity, and restored to the natives the plunder Loria had taken. Sir William expected to be very well received when he went again, but he was not, the explanation being that Loria had broken his faith with the administrator, and had kept back half the things. It will now take some time before these natives can be pacified.

Dr. Loria boasted that he did this in the interests of science. Now, I am a man of science, and I have collected skulls and other objects in New Guinea; but I paid for everything I obtained, and the man who sold me the skulls got exactly what he asked for them. It is quite possible to collect without robbing, and I think we ought to repudiate this looting of natives. Wherever this is done, whether by scientific men or others, the penalty is afterwards paid by the missionaries, traders, and the government; for whenever wrong is done by the white man, other white men reap the bitter fruit. All through his reports one sees that Sir William shows sympathy with and a knowledge of the natives, a firm hand and absolute justice.

Mr. RAY: I should like to be allowed to thank Sir Wm. Macgregor for the aid he has given to the philologist by the valuable appendices to his Annual Reports. These, by bringing the languages to light, have afforded a guide to the anthropologist

in trying to solve some of the perplexing race-questions which are met with in New Guinea.

The languages may be very clearly separated into two principal groups. For these Professor Haddon and I have suggested and used the names Melanesian and Papuan. By "Melanesian" we indicate a relationship to the languages of the Melanesian Islands; by "Papuan" we indicate a group of languages which have nothing in common with the Melanesian.

The principal languages assigned to the Melanesian group are:—

1. The Maiva and Mekeo of the districts around Yule Island and the S. Joseph river.
2. The Motu of the Port Moresby district.
3. The Loyalupn dialects in the neighbourhood of Hood bay.
4. The Suau and Sariba of South cape and the adjacent islands.
5. The Awaiama and dialects about Chads bay and East cape.

Sir William Macgregor has briefly pointed out the likeness of these languages to the Fijian, and they do not present a single feature which is strange to the student of the dialects of the Melanesian Islands. The grammar is exactly the same. The regular and irregular variations in phonology have the same characteristics; the pronominal roots, personal, interrogative and demonstrative, are the same; verbal particles and suffixes are used just as in the Solomon Islands and New Hebrides; nouns and prepositions show the same methods of formation, and have the same constructive particles. The vocabulary of this group of languages in New Guinea is also full of words which are common in the Melanesian Islands. We cannot therefore avoid the conclusion that these languages have the same origin.

The languages, which have been called Papuan, present the widest possible contrast to the Melanesian. They are essentially the languages of inner New Guinea, that is so far as the interior is yet known. West of Cape Possession, the two best-known languages are the Kiwai, of the Fly delta, and the Elema, or Toaripi, on the north shore of the Papuan gulf. The languages of Torres Straits show evidences of a connection with these two. Another group of Papuan tongues, Koitapu and Koiari, is found inland from Port Moresby, and another is spoken on the south coast of the Possession, from Cloudy bay to Mairu Island.

These Papuan tongues have no structural agreement with the Melanesian, but seem in some cases to have borrowed a few words. The grammar is very little known, and the verbal forms are especially complex. In Kiwai and the Torres Straits languages, the noun and pronoun are declined through numerous cases, as in Australian, and the other languages present evidence of a similar formation.* Another characteristic of the Papuan languages is their diversity. One language agrees with another neither in grammatical details, in constructive particles, nor in vocabulary. They apparently belong to separate linguistic stocks. The languages of the Louisiade Archipelago are rather difficult to place. All of them present Melanesian characteristics, and the grammar of Panaeti, which is the best known, is as entirely Melanesian as the Motu. But the vocabularies are full of strange words, for which we may suggest a Papuan origin, as they present the Papuan characteristic of variety. Till their place can be definitely decided, they have been

* See my paper in *Jour. Anthrop. Inst.*, August, 1894.